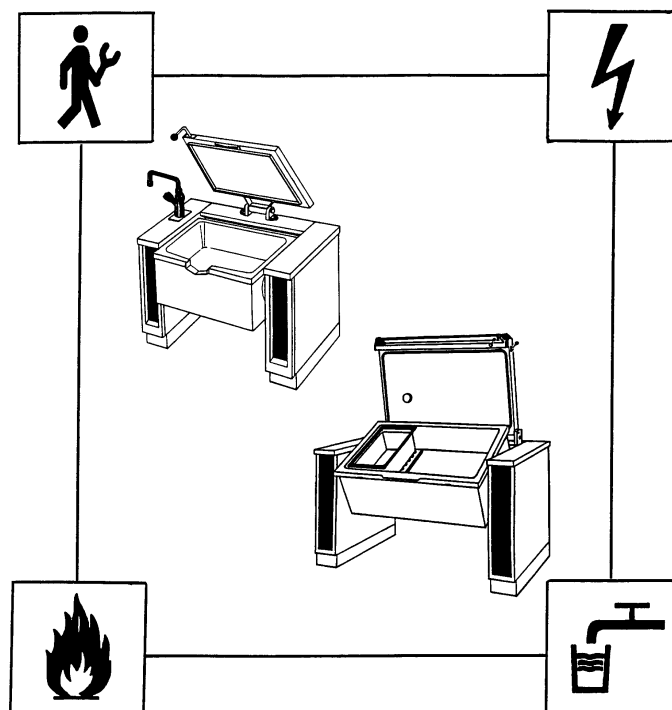


# Service Manual

GB/03.97

76.9208.04 (6)



**THERMETIC Tilting**  
**FRYING PANS** **FET-E**  
**PRESSURE BRAISING PANS** **UET-E**



SVDB  
ASCP



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**VALIDITY**

This document refers to the following tilting pan program with the above mentioned functional components.

Tilting frying pans, electrically heated	FET-060 E	FET-080 E	FET-100 E	
Tilting pressure braising pans, electrically heated	UET-060 E	UET-090 E	UET-100 E	UET-150 E

**ADDITIONAL DOCUMENTS**

Operating instructions FET-E	76.9113	delivered with the appliance
Operating instructions UET-E	76.9114	delivered with the appliance
Installation instructions FET-E/UET-E	76.9112	delivered with the appliance
Spare parts list FET-E	76.9205	distributed by the service department
Spare parts list UET-E	76.9206	distributed by the service department
Electrical diagrams	according to model	delivered with the appliance

**SERIAL NUMBER of the appliance YWWXXXXX**

The serial number is marked on the type plate. The 8 digits give following information:

Y	last digit of the year of production
WW	week of production
XXXXX	running number

**SAFETY MEASURES**

- Maintenance work, adjustments, conversions and repairs may only be carried out by an authorized technician. These technicians must be instructed by the manufacturer and carry out the work in accordance with specific national and local regulations. Parts requiring replacement are only to be replaced by original spares.
- Follow strictly the attention and warning label indications on the appliances.
- Cleaning and maintenance may only be carried out when the appliance is cold.
- The manager is responsible for ensuring that all components relevant for safety (lid safety valve, thermostat, excess-temperature thermostat, lid lock) are in perfect working order at all times. The operating condition of these components must be examined by an authorized technician at least once a year and any defects remedied if required.
- Before beginning any servicing, all appliances must be disconnected from the power supply; the steam, condensate, hot water and drinking water pipes must also be turned off or closed. Disconnection from the

power supply is effected by switching off at the main switch or removing the fuses fitted to the power supply.

- The internal wiring in the appliance as well as the earth connections must be carried out in accordance with the complete electrical schematic. Basically, all metal parts on which electrical connections are located must be earthed.
- Pressure braising pans of this design and operating mode do not require special acceptance tests. They are subjected to a pressure and operating test which meets the regulations on the manufacturer's premises. Recurrent pressure testing is not compulsory. To ensure the complete operating efficiency and safety of appliances, however, owners should arrange for personnel authorized by the manufacturer to check on all safety equipment and to conduct pressure tests at regular intervals.
- After the appliance has been connected up, the service agent must carry out a test of all functions in the course of which all the programs and operating states of all operating elements as laid down in the operating instructions are checked.
- The conclusion of a maintenance agreement should be recommended to the user.

**MAINTENANCE INTERVAL (Recommendation)**

	approx. year
Tilting frying pans	1
Tilting pressure braising pans	1

## 1. TILTING FRYING PANS FET-E

### 1.1. CONSTRUCTION / FUNCTIONS

The food is heated by the thick base of the pan under which several electric rod heaters are located. The pans are equipped with an electronic comfort control unit with regulation of the bottom resp. food temperature with or without programming of the cooking time and starting

time. The control system is operated via a membrane keyboard. The pan has a variable-speed tilting facility powered by an electric motor. All types can be fitted with a mixing unit if required.

### 1.2. TECHNICAL DATA

#### Tilting frying pan

Model (optional)

Style of mounting (optional)

Control system

Pan bottom made of steel or nickel-chrome plated steel

Floor mounting with floor support or wall mounting with console

Electronic control of pan-base and cooking temperature

or process control system of pan-base and cooking temperature regulation with programmable cooking and starting time

Protective system

Hoseproof IP X5

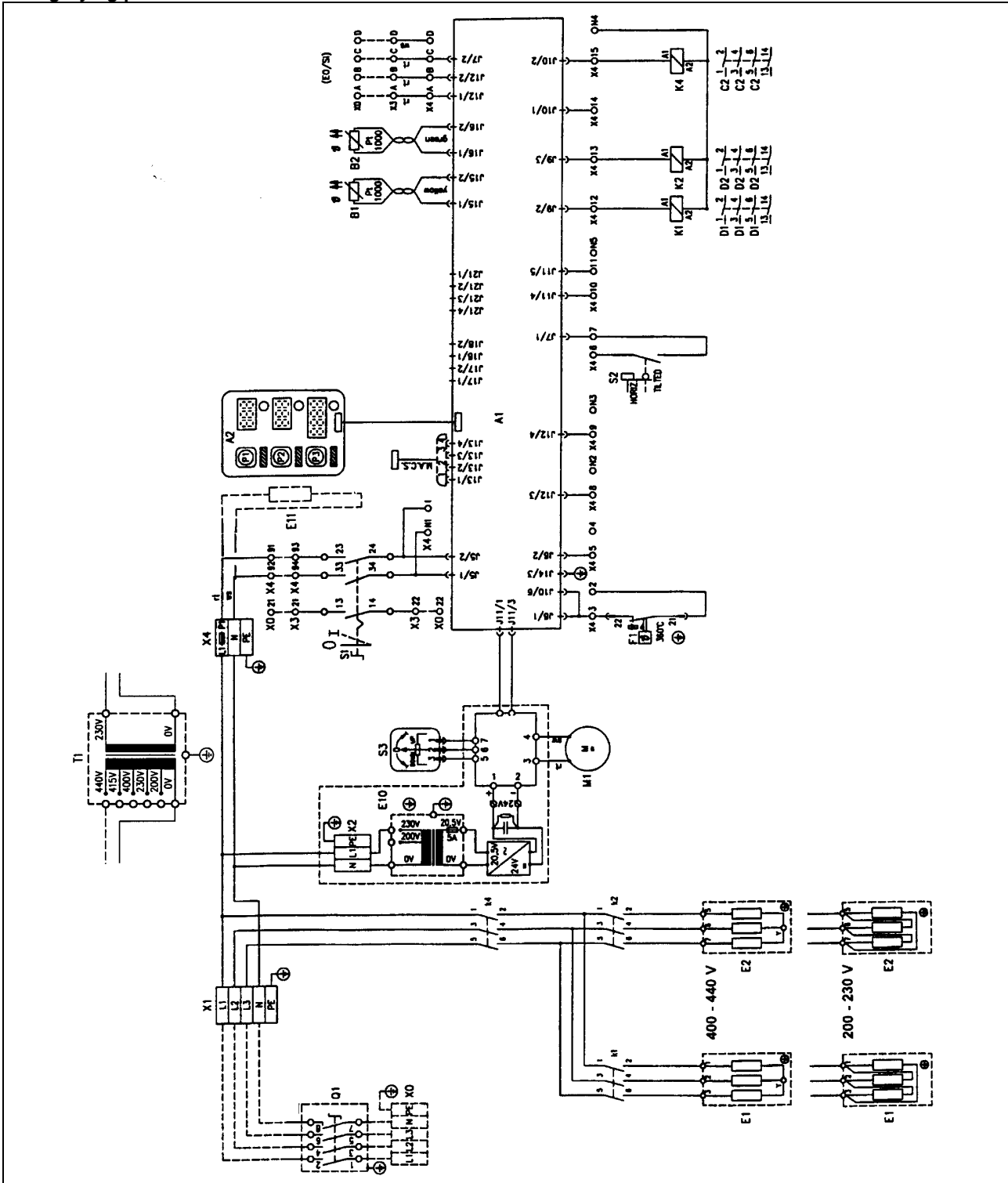
Heating up times (see schedule)

Heating up of an empty pan from 20° to an average bottom temperature of 230°C

Type	FET-060 E	FET-080 E	FET-100 E
Wattage kW, incl. tilting motor	12.2	15.2	18.2 (15.2)
Voltage 400V/3~NE Current A	17.6	22	26.3
Voltage 415V/3~NE Current A	17	21.2	25.3
Voltage 440V/3~NE Current A	16	20.2	23.9
Voltage 230V/3~NE Current A	30.7	38.2	45.7
Voltage 200V/3~NE Current A	35.2	43.9	(43.9)
Net content in dm <sup>3</sup> (= max. capacity)	63	84	104
Heating up times, min.	20	20	20
El. tilting motor Wattage kW Voltage Current A	0.2 230V/1~NE, 50 Hz 1		

### 1.3. ELECTRIC DIAGRAM



#### Tilting frying pan FET-E



- |     |                           |      |   |       |  |
|-----|---------------------------|------|---|-------|--|
| A1  | Control print             | F1   | Excess-temperature thermostat                 | S3    | Tilting switch                                     |
| A2  | Operating print           | K1.2 | Contactors                                    | X0-.. | Terminals  |
| B1  | Food temperature sensor   | K4   | Safety contactor                              | X4    | Control fuse                                       |
| B2  | Bottom temperature sensor | M1   | Tilting motor                                 | T1    | Single-phase transformer (only for voltage ≠ 230V) |
| E   | Heating elements          | Q1   | Power isolator, optional                      | EO/SI | Connection for energy optimizing system            |
| E10 | Tilting control           | S1   | Control switch                                |       |  |
| E11 | Heating resistor          | S2   | End switch for horizontal position of the pan |       |  |

The precise specifications of the individual electric components are given in the corresponding parts list. These must be used in conjunction with the electrical schematic valid for the appliance.

## 1.4. MAINTENANCE CHECK LIST

Check		Fault & Remedy
Connections for protective conductors  Connections for equipotentiality  Check that all electric <b>connections and contacts</b> to terminals, coils, switches and junctions are tight.		If contacts are loose ⇒ tighten contacts.
Check <b>contactors</b> and <b>relays</b> . The contacts must move freely without sticking or jamming. Check all contactors for traces of burning.		If defective or faulty ⇒ replace contactor or relay.
Measure the individual <b>phase currents</b> with a clamp-on ammeter on the power supply immediately before the connection terminals with the appliance switched on full and compare the currents with the data on the electrical schematic.		Identify defective consumers (heating systems) by carefully measuring the individual currents. If major deviations are discovered ⇒ replace.
Inspect internal <b>wiring</b> .		If cables are faulty ⇒ replace cables.
Check condition of all <b>operating foils</b> .		Defective foils ⇒ replace.
Optical inspection of the whole <b>control unit</b> .	S	If faults are discovered ⇒ repair faulty units or exchange parts.
Test all operating functions and check that the <b>control unit</b> works correctly.	S	If problems are encountered ⇒ find reason and repair failure.
Check <b>switches</b> for easy movement and correct function.		If the switch is hard to turn or makes a noise ⇒ replace.
Compare the digital display of the <b>bottom temperature</b> with the actual value measured.		If the deviation is > 5°C ⇒ trim the display again.
Compare the digital display of the <b>food temperature</b> with the actual value measured.		If the deviation is > 5°C ⇒ trim the display again.
Inspect fixation and condition of all <b>temperature sensors</b> (bottom, food, excess temperature) and check electrical connections.	S	If sensors, fixation, electrical connections are found to be faulty ⇒ replace the parts concerned.
Inspect condition and function of the <b>safety thermostat</b> .	S	If sensors, fixation, electrical connections are found to be faulty ⇒ replace the parts concerned.
Test if all <b>heating elements</b> work well by measuring the indicated heating-up time or measure the current or resistance.		If larger differences are noted ⇒ exchange the faulty heating element.
Check all elements of the <b>display</b> on the operating panel with service test 1.		If any element of the display fails ⇒ exchange the whole operating print.
Inspect fixation and condition of all <b>switches</b> (power isolator, control, tilting) and check electrical connections.		If defects to any fixation or electrical connections are discovered ⇒ replace the parts concerned.
Check function of <b>acoustic signals</b> .		If the sound is offkey or no sound is heard ⇒ exchange the whole control print
Check the <b>lid</b> for correct shape or damage.		If irreparably damaged ⇒ replace the lid.
Check the <b>lid hinges</b> for correct function.		If defective ⇒ disassemble, clean, grease, adjust the hinge.
Check function of <b>mixing unit</b> for function. Check tightness of water connections.		If the tap drips or if any pipes leak ⇒ replace seals.

S = Part is relevant for safety

If, during servicing, an increased number of failures is noted for a part that is relevant for safety, a written report must be sent to the «Aftersales» office responsible without delay.

### Measuring the temperature of the pan base

Precise measurement of the temperature of a pan base using methods in which contact with the base takes place by touching it with a probe (thermocouple, thermometer, etc.) is very unreliable and generally leads to deviations

in the order of minus 20°C to 40°C. The use of heat-conducting paste does not result in any substantial improvements.

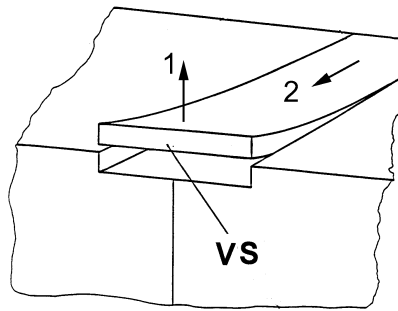
Correct results can be achieved by means of infrared measurement using a pyrometer (e.g. Raytek's Raynger, series ST2L). To prevent reflection from the pan base, a heat-resistant, fibre-glass tape (e.g. Scotch Brand tape from 3M) must be bonded to the area to be measured. A surface area of 5 x 5 cm is enough for this purpose.

## 1.5. ACCESS TO INSIDE

### Sheeting of console, support, pan

#### Remove the **connecting rail (VS)**

Loosen the front nuts M6 from underneath. Bend the rail up slightly at the front. Pull the rail out of the appliance.



#### Remove the **cover (A)** of the console:

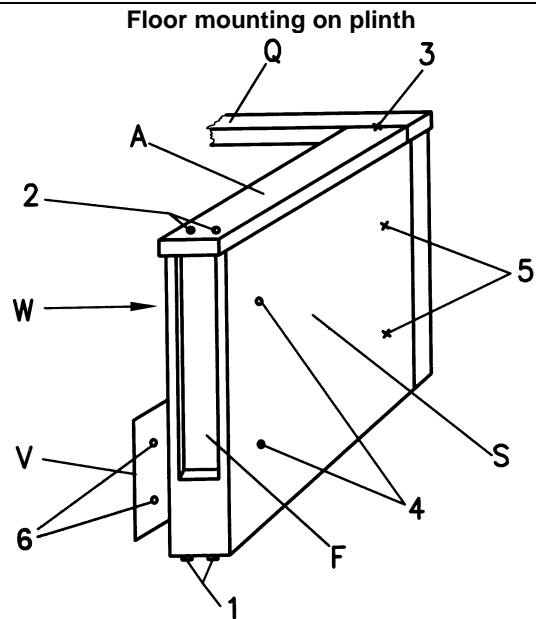
Remove the rubber plugs (KU) with a screwdriver. Remove the nuts (MU) (two on a single console, four on a twin console) at the relevant location (2). Lift the cover at the front and pull it out of its clip attachment at the back (3). If a mixing unit is fitted, this does not need to be removed from the cover.

#### Removal of **Service panel (V)** of the support:

Remove the two external nuts (6) at the front and pull the panel from its rear attachment points (5).

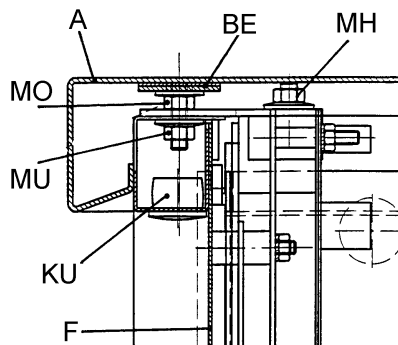
#### **Switch panel (F)** removal:

First disconnect the cover (A), i.e. lift it at the front. Unscrew the two screws at location (1) underneath the switch panel and the nuts (MH) at location (2) on the top, pull out the switch panel at the bottom and then lift up out of the fixation. The panel is turned up 90° like a door and hung at the top on the console.

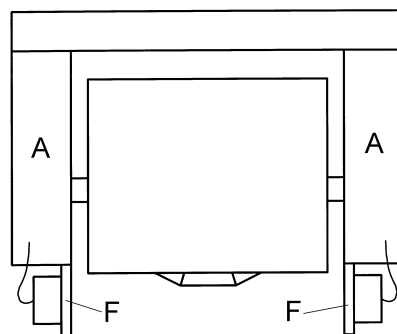


#### **Sidewall (S)** removal:

To remove this, the switch panel (F) must be removed first. Remove the nuts (4) and (5) inside. The upper internal wall (W) cannot be disassembled. It must be removed and refitted together with the pan.



#### Hanging the switch panel on the console



The panels are refitted in the reverse order to that described above.

**Cover (A).** The height of the cover can be leveled by fitting more or fewer shims (BE) and tightening the nuts (MH)

### Removing the **pan base (BD)**.

Set the pan in the horizontal position. Remove the screws (SB) from underneath and take out the base (BD) from underneath.

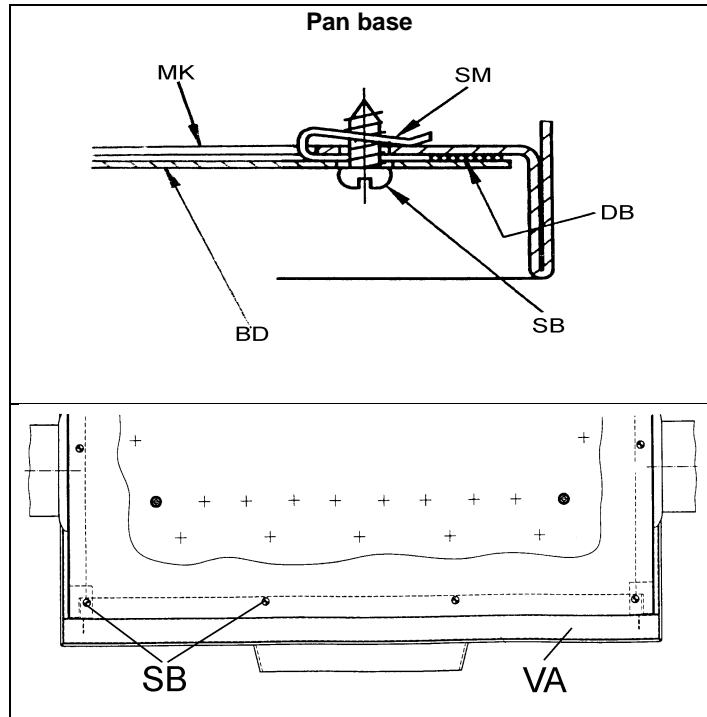
### Fitting the base (BD).

Carefully clean any remains of the old seal from the edge of the base. Stick a new sealing strip (DB) on the edge of the base. Carefully position the threaded clip (SM) on the jacket (MK). Tighten the screws (SB).

**Pan jacket.** The pan jacket is not removed during normal servicing work. Please refer to § FU1.6 for instructions.

### Removing the **Front pan cover (VA)**:

The front panel of the pan cover can be removed as follows without removing the base (BD): remove the front screws (SB), pull off the panel underneath the pan, draw the panel down and out of the pan flange.



### Removal of the **Cover (A)** of the console:

see the section on floor mounting on a plinth.

### **Switch panel (F)** removal:

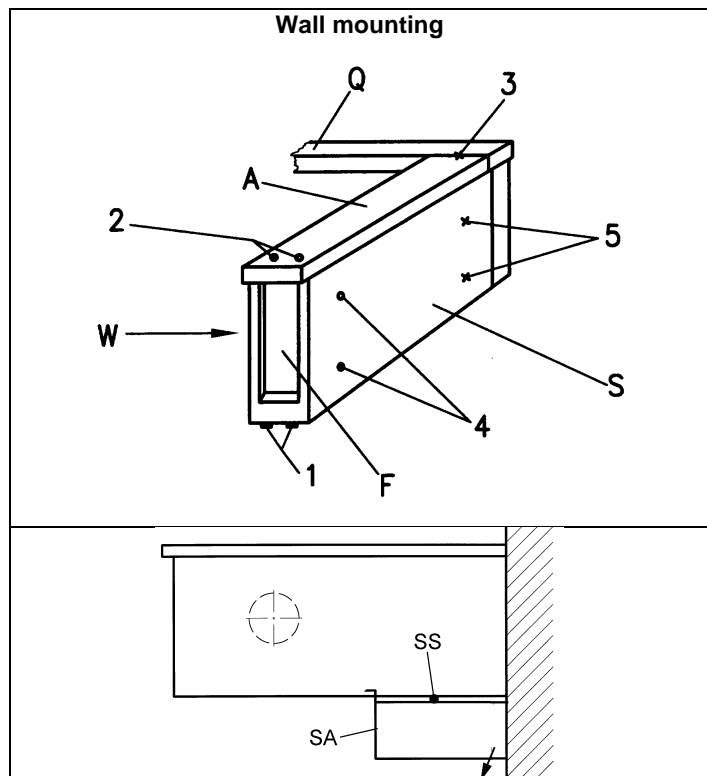
see the section on floor mounting on a plinth.

### **Sidewall (S)** of the console removal:

see the section on floor mounting on a plinth.

The upper internal wall (W) cannot and the floor panel must not be removed.

The panels are refitted in the reverse order to that described above.



Under the **protection cover (SA)** of both consoles are various connections of installation.

### Removing the cover:

- Remove both screws (SS).
- Pull down the cover (SA) on its rear part and take it out from the front supports.



## 1.6. FUNCTIONAL COMPONENTS

### FU1.1. OPERATING FOIL

#### EXCHANGE

##### Removal

Operating foils (FO) are bonded to the sheetmetal surfaces (cover plates) with self-adhesive coatings. They are removed with a spatula, a screwdriver or a knife.

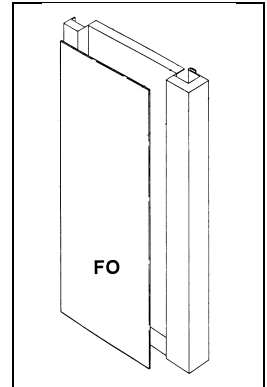
##### Cleaning

The surfaces to which the foil is to be applied must be clean and dry, i.e., free from dust, grease, rust, paint, etc. Suitable for cleaning: toluol or 3M article S-152 stick remover.

Procedure: shake the can thoroughly and spray evenly on the surface to be cleaned. (Distance about 15 - 20 cm.) Rub over with a clean lint-free cloth. If surfaces are heavily soiled, repeat the process.

##### Sticking on the foil

Remove the protective backing, taking care not to touch the adhesive. After positioning press down well. It is important to apply firm, even pressure. The ideal working temperature is approximately 25°C. Temperatures below 10°C should be avoided since the adhesive becomes too hard and instantaneous adhesion is reduced. Following application, the foil has a working temperature range from -40° to + 120°C continuous temperature load and 180°C short-time temperature load.



## FU1.2. UNIVERSAL CONTROL

The appliances are equipped with a precise state-of-the-art electronic microprocessor control system

- Comfort control with digital preselection of bottom resp. food temperature and cooking time,
- Process Comfort control with additional digital preselection of starting time and automatic steam condensation after pressure cooking for pressure braising pans.

The control system can also be remotely controlled using a PC. For control-system operation, please refer to the Operating Instructions.

**The symbol on the operating foil as well as the function of the key (V) for steam condensation after pressure cooking is only present on tilting pressure braising pans.**

### Temperature setting

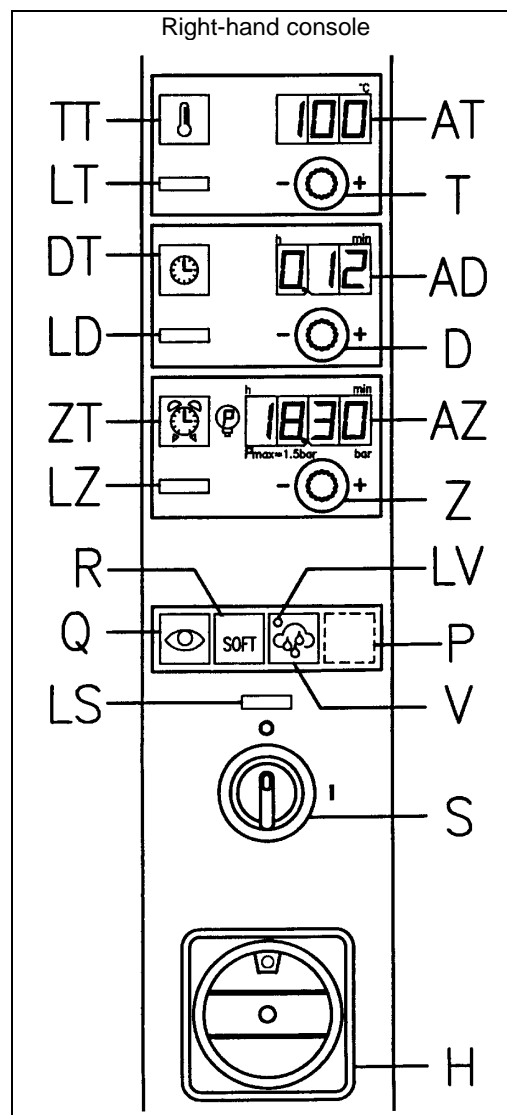
#### Cooking

If the nominal temperature set on the display (AT) is equal or lower than 110°C, control takes place via the food sensor fitted to the external side wall of the pan. The appliance is set to the «Cooking» operating mode. The nominal temperature is reached during heating up and then kept at this value - but not exceeded - by electronic control and energy is supplied as and when required. If pressure cooking is not selected, a maximum setting of no more than 100°C is recommended.

#### Frying

If the nominal temperature set on the display (AT) is higher than 110°C, control takes place via the bottom sensor fitted underneath the pan. The appliance is set to the «Frying» operating mode. The nominal temperature is reached during heating up and then kept at this value - but not exceeded - by electronic control and energy is supplied as and when required.

When the appliance is switched on (switch S), the contactor (K4) is also always energized. The two other contactors (K1 and K2) switch the heating on and off simultaneously as required, i.e. with a mutual delay of approximately 1 second.



### Displays

AT (3 digits)

- Temperatures (if all 3 digits light up as well as the point after the third digit, then this means that 0.5°C must be added on after the point).
- Parameter number (PNo.).
- Parameter value (if all 3 digits light up as well as a decimal point, then the numeral must be multiplied by 1000. E.g. display = 3.99, value = 3990).

AD (3 digits)

AZ (4 digits)

- Software version.

- Cooking time.

- Clock time.
- Starting time.
- Delay time.

## PARAMETER PROGRAMMING

### General remarks

The same software is used for all appliances which are equipped with this control system. To ensure that each appliance operates as desired, specific parameters must be entered. The control systems which are installed in the appliances at the factory or are in stock, are equipped with the microprocessors fitted including the software. The software contains a default setting (GS) of the parameters (PNo.). The default setting is selected in such a way that a minimum of parameters have to be adjusted for the individual setting of the different appliances. In

principle, the corresponding parameters have to be entered for each appliance.

### Software version

The microprocessor bears an adhesive label stating the software version and the date. Any change in the software usually also involves a change in the parameters. Please always ensure that the version of the parameter list used matches the software version. The following general rule applies: if the software version has a different number, the parameter list with the same version must also be used. If the software version has a different additional letter in the version number (e.g.

version 2.51A, version 2.51B, etc.), the parameter list does not change. Only the number of the version without the additional letter is important for the parameter list.

### Microprocessor (MP)

2 IC insertion sockets are located on the control print. The large insertion socket for 64 pins accepts the microprocessor. The software program is located in the ROM (Read Only Memory) of the microprocessor chip. An OTP version (One Time Programmable) microprocessor is used. This version can only be written to once and cannot be erased. This means that any program change also means the use of a new chip. The old chip can no longer be used.

### EEPROM (EP)

2 IC insertion sockets are located on the control print. The small insertion socket for 8 pins is for the EEPROM (Electrically Erasable Programmable Read Only Memory). The parameters are stored in this IC. Once stored, the parameters remain in this IC even when disconnected from the power supply until they are changed by reprogramming or erased.

Before the parameters are changed for the first time to suit an appliance, the values for the default setting must be loaded into the EEPROM. The parameters can be entered in 2 different ways:

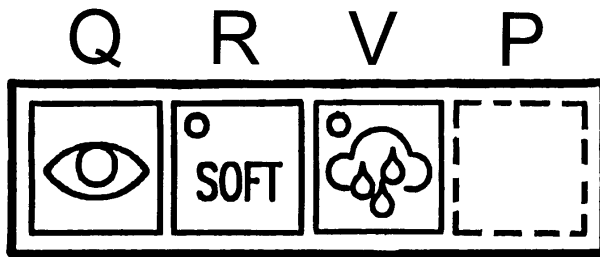
Manual input (the more frequent case) and PC input.

## MANUAL PARAMETER INPUT

### Default setting (GS) of the parameters

The default setting of the parameters is the same for all appliances which are equipped with this control system. Dependent on the type of appliance, more or fewer parameters are required with values that differ from each other to some degree. 3 of the 4 buttons on the

membrane keyboard (Q, R, V and P) are used for the programming of parameters. The buttons are located in the bottom row on the operating panel. Button P is located under the membrane and is not visibly marked by a symbol. This also applies to key V on FET pans.



The illustration refers to tilting pressure braising pans UET

Starting position: supply switched off (switch S at 0)				
1st combination press and hold buttons				
Supply to be switched on (turn switch S to I)				
2nd combination press buttons				
3rd combination press buttons				
4th hold button R				
Waiting time between the different combinations is max. 3 seconds				
Press buttons continuously until the 2nd beep, then press the 2nd combination				
Press buttons continuously until the 2nd beep, then press the 3rd combination				
Press buttons continuously until the 2nd beep				
Hold button R pressed until the 2nd beep, then release. (*)				

(\*) Display (AT): After «def» is displayed for approx. 2 seconds, the actual value of the current food temperature will appear.

Display (AZ): Clock time appears (only with process comfort control).

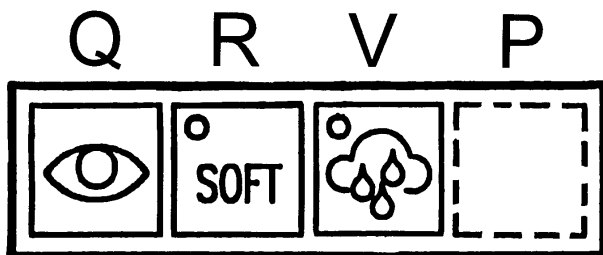
The control system program now contains all the default settings for the software version of the microprocessor installed.

### Important

If the default setting (GS) of the parameters of an appliance which was already in operation is programmed for new, all parameters which registrate running times are set to zero.

**Parameter-setting (X) specific to each appliance**

In order to change the numbers (PNo.) and the content (X) of the parameters, the same buttons are used as those for entering the default setting.



The illustration refers to tilting pressure braising pans UET

Starting position: supply switched off (switch S at 0)				
1st combination Press and hold buttons				
		Supply to be switched on (turn switch S to I)		
2nd combination Press button				
		Press buttons continuously until the 2nd beep, then press 2nd combination (for the first time only 1 beep)		
		Hold button R pressed until the 2nd beep, then release.		

Waiting time between the different combinations is 3 seconds maximum

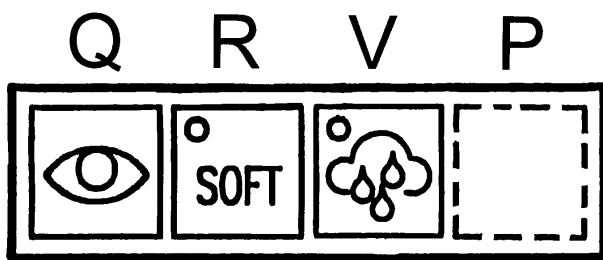
Display (AT): Parameter PNo. . . 1 appears

Display (AZ): None

The parameter numbers (PNo.) and the values (X) which deviate from the standard setting can now be entered alternately on the display (AT).

As the same display is used to show the numbers (PNo.) and the content (X) of the parameters, the following difference is made between the two figures:

Kind of display (AT):	Meaning of display:
with 3 decimal points (e.g. 1.0.3.)	Number of parameter PNo.
without decimal points (e.g. 250)	Content (X) of parameter (e.g. temperature)

**Changing the parameter number (PNo.) and content (X)**

The illustration refers to tilting pressure braising pans UET

1st Press button					<b>Changing</b> the display (AT) from: parameter number (PNo.) to parameter content (X) or vice versa
2nd Press button					<b>Increasing</b> the display entered under 1. parameter number (PNo.) or parameter content (X)
3rd Press button					<b>Reducing</b> the display (AT): parameter number (PNo.) or parameter content (X)

**Rate of change of the displays**

Increases (button P) or reductions (button Q) can be done at three different speeds:

- Press the button briefly changes in single steps
- Press the button longer at least 1 second the display changes slowly
- press for at least 5 seconds the display changes fast

**End of parameter programming**

If the content (X) of a parameter (PNo.) is changed, the changed value is stored when the display (AT) is changed from parameter content to parameter number using the button R. The following applies for the last parameter

content changed or if only a parameter content has been changed.

Parameter programming can be finished in 2 ways dependent on whether the changed value is to be stored or not.

<b>Finishing:</b>	<b>Procedure:</b>
Changed value to be <b>stored</b>	<ul style="list-style-type: none"> <li>- Display (AT) shows the <b>parameter number</b></li> <li>- Switch off control switch (S)</li> </ul>
Changed value <b>not</b> to be <b>stored</b>	<ul style="list-style-type: none"> <li>- Display (AT) shows the <b>parameter value (X)</b></li> <li>- Switch off control switch (S)</li> </ul>

**PARAMETER INPUT BY COMPUTER****Hardware required**

- PC
- Procond interface
- Procond interface cable

**Initial position prior to testing**

The microprocessor is programmed and fitted. The chip has an adhesive label which states the software version and the date. The EEPROM is also fitted.

**Entry using a PC**

The parameters are entered using a PC. An interface and a connecting cable are also required for connection to the PC.

**Loading the default parameter settings (PNo.)**

The default parameter settings must be loaded prior to any initial setting or after inserting a new microprocessor with a different software version.

**Parameter changes**

The parameters are changed using the PC keyboard.

## PROGRAMMING SPECIFIC APPLIANCE AND USER DATA

Appliance-specific parameters are only set on the basis of the type of appliance. User-specific parameters are dependent on user order, user requirements, siting terms and are only appliance-dependent to a certain degree. The parameters are programmed at the factory to the default setting (GS) if no specific information is given.

### New appliance installation

In the case of new appliances, the control system is programmed at the factory to the appliance-specific setting.

When the appliance is installed at its intended site, the fitter in charge of installation must set or check the following parameters on the control system. The parameter values are different for each software version.

SOFTWARE VERSION BPTH 2.62				
PNr. Parameter number	GS Default setting	Designition	FET-E	UET-E
4	0	Energy optimization system EO	without: 0 with: 1	without: 0 with: 1
9	0	Pressure switch in the food compartment		1
12	0	Automatic steam condensation		without: 0 with: 1
19	1	Power settings and boiling temperature	0	0
49	0	Appliance code	3	3
50	1	Appliance type	2	2
54	4	Quantity of switching steps	2	2
83	50	Input of height above sea level of the installation site in 10 m (500 m above sea level. = 50).	X	X
96	300	Max. food temperature	200	200
97	200	Max. jacket resp. bottom temperature	300	300
99	170	Max. jacket pressure to release alarm	0	0
140	97	Temperature switching margin for the food sensor	200	200
142	10	Min. switched-off time of the heaters	0	0
144	110	Max. food setting temperature	250	250

SOFTWARE VERSION BPTH 5.06				
PNr. Parameter number	GS Default setting	Designition	FET-E	UET-E
4	0	Energy optimization system EO	without: 0 with: 1	without: 0 with: 1
9	0	Pressure switch in the food compartment		1
12	0	Automatic steam condensation		without: 0 with: 1
19	1	Power settings and boiling temperature	0	0
29	1	Deaeration sensor of the jacket	0	0
32	0	HACCP function	without: 0 with: 1	without: 0 with: 1
35	0	Function of the steam condensation sensor		without: 0 with: 1
49	0	Appliance code	3	3
50	1	Appliance type	2	2
54	4	Quantity of switching steps	2	2
83	50	Input of height above sea level of the installation site in 10 m (500 m above sea level. = 50).	X	X

## TRIMMING OF TEMPERATURE MEASURING

### Measurement accuracy of temperature sensors

In general, the measuring accuracy of the temperature sensors is enough for them not to have to be trimmed. Trimming the temperature sensors can be done via parameter PNo. 1.0.0. for the food sensor and via parameter PNo. 1.0.1. for the bottom sensor. Trimming consists of entering a certain correction temperature (Offset temperature).

### Measuring errors inherent in the system

Every pan has a bottom- and a food sensor. If there is a temperature difference between the measuring location (where the sensor is located) and the measurement of the bottom resp. food temperature, temperature measurement must be trimmed. This trimming is done through software with the help of parameters. 2 measuring points per sensor are provided for trimming. Trimming can be done at any test temperatures. As correction is a linear function, the temperature difference to be corrected can be converted on a linear basis to the corresponding fixed temperatures on the X-axis (50° resp. 100 °C).

### Trimming procedure for a sensor

- Ascertain the magnitude of  $\Delta T$  and direction  $\pm$  of the temperature deviation between the temperature display (AT) and the bottom resp. food, measured directly with a thermometer at any temperature. In order to minimize the error, this measuring temperature should be as high as possible.
- Convert the deviation measured  $\Delta T$  to the bottom resp. food temperature 100 or 50°C. These two values are to be used as corrections for the parameters of the bottom temperature PNo. 1.0.4. and 1.0.5. and for the food temperature PNo. 1.0.8. and 1.0.9.
- If the actual measured temperature is higher than the temperature shown on the display (AT), the Y-values (PNo. 1.0.4. and 1.0.5. resp. PNo. 1.0.8. and 1.0.9.) will have to be lowered accordingly.
- If the actual bottom temperature is lower than the temperature shown on the display (AT), the Y-values (PNo. 1.0.4. and 1.0.5. resp. PNo. 1.0.8. and 1.0.9.) will have to be raised accordingly.

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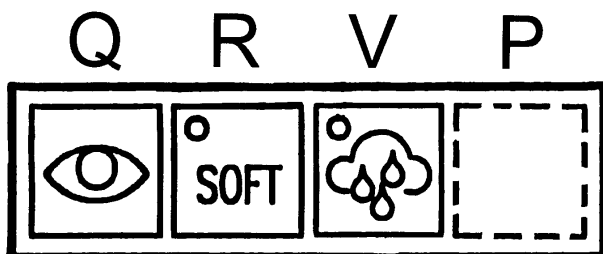
<b>Example:</b>	Measured bottom temperature	180°C
	Display (AT) on control panel	200°C
	Difference	+20°C
	Translation to bottom temperature of 100°C	$+20 \times (100:180) = +11^\circ\text{C}$
	Translation to bottom temperature of 50°C	$+20 \times (50:180) = +5.5^\circ\text{C}$
	Correction for PNo. 1.0.4. =	$50 + 5.5 = 55.5^\circ\text{C}$
	Correction for PNo. 1.0.5. =	$100 + 11 = 111^\circ\text{C}$

**Sign:** If the bottom temperature measured is lower than the one displayed, the correction values are increased (plus sign). If the bottom temperature measured is higher than the one displayed, the correction values are reduced (minus sign).
















## TEST FUNCTIONS for service application

For servicing purposes, various values and operating states of the control system can be shown on the existing displays with the help of buttons on the operating panel. The buttons are also used to reset the jacket refilling display. The cooking process can be switched on or off. All 4 buttons (Q, R, V and P) on the membrane keyboard

are used for service test displays. The buttons are located on the bottom row of the operating panel. The buttons have to be held down for the button combination for the activation of the test displays and the reset. In order to avoid incorrect functions, always press the Q button down first before pressing the other buttons.



The illustration refers to tilting pressure braising pans UET

Starting position: supply switched on (switch S at I)					
1st test, press buttons and hold					First time: <b>check lamps</b> ; the figure 8 is shown on all displays, also all points are displayed
2nd test, press buttons and hold					Second time: on display (AT) the <b>temperature</b> in °C of the <b>control print</b> and on display (AZ) the <b>clock time</b> are shown
3rd test, press buttons and hold					The display (AT) provides information on the current <b>condition of the heating system</b> : 1. electric or gas ON = switched on, OFF = switched off
4th test, press buttons and hold					Display (AT) = <b>temperature in °C of food sensor J15</b> . Display (AZ) = <b>clock time</b>
5th test, press buttons and hold					Display (AT) = <b>temperature in °C of bottom sensor J16</b> . Display (AZ) = <b>clock time</b>
6th test, press buttons and hold					Display (AT) = number of <b>software version</b> (e.g. 2.62) Display (AZ) = <b>clock time</b>

## TROUBLESHOOTING DISPLAY

A fault in the appliance is registered by the electronic control system and, dependent on the type of fault, is shown on the **display (AT)** by the letter E (error) combined with a one- or two-digit number. At the same

time as the fault occurs, an intermittent warning tone will sound, the energy supply is interrupted and the lamp is switched off. Press button Q to acknowledge the error message (warning tones).

Display/ failure code	Problem	Action
E1	Defective food temperature sensor (J15); appliance switches off	Reset the error message and alarm with button (Q); repair cause of problem (loose connector, broken sensor, short circuit)
E2	Defective bottom temperature sensor (J16); appliance switches off	Reset the error message and alarm with button (Q); repair cause of problem (loose connector, broken sensor, short circuit)
E5	Defective control print temperature sensor	Reset the error message and alarm with button (Q); replace control print



E6	Temperature of food sensor J15 is too high	Reset the error message and alarm with button (Q); repair cause of problem (defective contactor)
E7	Temperature of bottom sensor J16 is too high	Reset the error message and alarm with button (Q); repair cause of problem (defective contactor)
E9	Defective analogue/digital transformer	Reset the error message and alarm with button (Q); replace control print
E10	Response of excess temperature thermostat; too high temperature of the bottom	Reset the error message and alarm with button (Q); find cause of too high temperature of the bottom; reset thermostat (F1) by pressing the red button

### FAULTY ERROR MESSAGE

If a faulty error message appears, that is to say, a message that is inappropriate for the appliance, the appliance's parameters are incorrectly set. This situation can be remedied by correcting the parameters for the appliance in question.

### MULTIPLE FAULTS

Two faults may be reported at once, e.g. E7 and E10. The displays follow one another. If, for example, fault display E7 is reset with button Q, E10 appears on the display (AT). The appliance will only function perfectly again when the latter has been remedied and reset.

### FAULTS WITHOUT DISPLAY

Finding the cause of the fault is dependent on the technician's skill.

Problem	Reasons
<b>Displays</b> do not light up when the appliance is switched on	- Control fuse (P1) is faulty
<b>Only the lamp (LS)</b> lights up when the control switch (S) is switched on. Other functions cannot be activated.	- Water on the control print. Blow it out and dry the print. - Microprocessor is not programmed
The operating displays go crazy	- Water on the control- and/or operating print - The flat cable between the control- and operating print is faulty or there is a poor connection somewhere.

### OPERATING PRINT (UP)

If a fault is identified, no repairs can be made to the print. It is replaced as a complete unit.

#### Removal

Pull off the operating knobs (BK) on the front of the switch panel. Then remove the control print (see below). Remove the long spacing sleeves (HP1). Remove the 6 nuts (MP2) and washers from the steel panel (ST). Remove the steel panel and the short spacing sleeves (HP2). Remove the operating print.

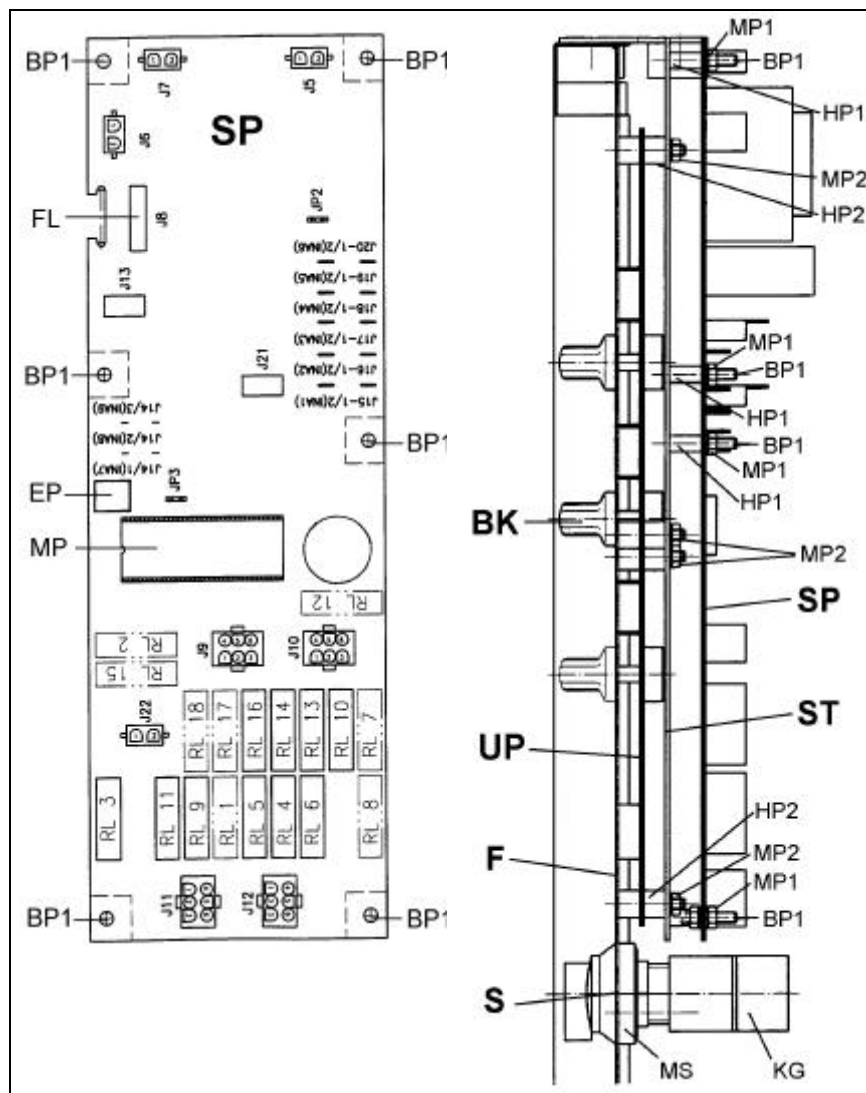
#### Installation

Proceed in the reverse order to removal. Plug the flat cable (FL) connector firmly into the print. Make sure that the print is centered in relation to the windows in the switch panel and the nuts (MPx) are not tightened excessively to avoid damage to the print. Replace the operating knobs firmly on the front panel to ensure that the seals are in place.

### CONTROL PRINT (SP)

If a fault is identified, no repairs can be made to the print. It is replaced as a complete unit.

If a control print is replaced, it must be reprogrammed dependent on the type of appliance and user-specific data (see section Programming the control system). However, the two ICs can be removed and refitted to the new print.



When changing the control print, the old, still serviceable ICs, microprocessor (MP) and EEPROM (EP) can be refitted to the new print. All information thus remains intact. This will save setting and programming work and avoid any possible errors. The number of the software version is marked on the microprocessor.

#### Removal

Take off the switch panel (F) as described in § 1.5. Unplug all electrical connectors from the print. Unplug the flat cable (FL) connector and take it out of the guide. Take off the 6 nuts (MP1) and washers. Take the print off the steel panel (ST) that is located between the control print and the operating print and maintains a gap.

#### Installation

Place the long spacing sleeves (HP1) on the bolts (BP1) on the steel panel (ST), position the print on the bolts and carefully tighten the nuts with their washers.

#### Reprogramming

The general test parameters are set in a new control pcb. These settings do not correspond to any specific type of appliance. After installing a new control pcb, the basic parameter values must be programmed in first followed by the parameters that are specific to the appliance (given in the parameter list).

### Control print faults

Reason:	Total failure Water damage Changeover to a new software version	Damage to the control print, but not to the ICs
Exchange:	Entire control print	Microprocessor (MP) and EEPROM (EP) on the control print
Action:	<ul style="list-style-type: none"> <li>- First request the parameter values of all sensors and note them down</li> <li>- Enter the default setting (GS) of the parameters</li> <li>- Enter the correction settings for the software version used</li> <li>- Enter the appliance-specific setting of certain parameters</li> <li>- Enter the user-specific settings</li> <li>- Enter the sensor corrections noted above resp. new trimming of the temperature measurement.</li> </ul>	No settings required

**Handling electronic prints**

Electrostatic discharges (ESD) on circuit boards can cause damage. Even voltages that are imperceptible to human beings can partially or totally destroy components. Partial destruction is frequently not noticeable at once and can lead to early failure. The chain of protection from ESD must not be interrupted, i.e. the following points must be observed where electronic components are concerned:

- Transport should only take place in conductive boxes or antistatic packaging to the place where the prints are to be fitted.
- Do not reload the prints in non-conductive containers.
- Work on disassembled switch panels (changing prints or ICs) must be carried out on surfaces of electrically

- conductive rubber. Servicemen carrying out work of this type must wear ESD armbands which are connected to the ground connection on the appliance.
- Do not touch the conductors when handling a print. Always hold them between your finger and thumb.
- ICs (microprocessor, EEPROM) may only be placed and stored on conductive foam or in specially designed containers.
- Never hold an IC with your bare hands - only do this when you are wearing a grounded armband.

The same arrangements and measures also apply to faulty prints that are returned for repair (warranty claims).

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**CONTROL SWITCH (S)****Removal**

Set the control switch to Position 0. Remove the switch panel (F) in accordance with § 1.5. Disconnect the electrical cables from the contact emitter (KG). Twist the contact emitter counterclockwise slightly by hand until it separates from the front switch part. Unscrew the nuts (MS) and take out the handle part at the front. (See picture Operating Print UP).

**Installation**

Proceed as described under "Removal" but in the reverse order. Make sure that the seal between the switch panel (F) and the handle part is correctly installed and undamaged. The cam on the handle part must also engage with the aperture in the switch panel.

### SAFETY THERMOSTAT (F1)

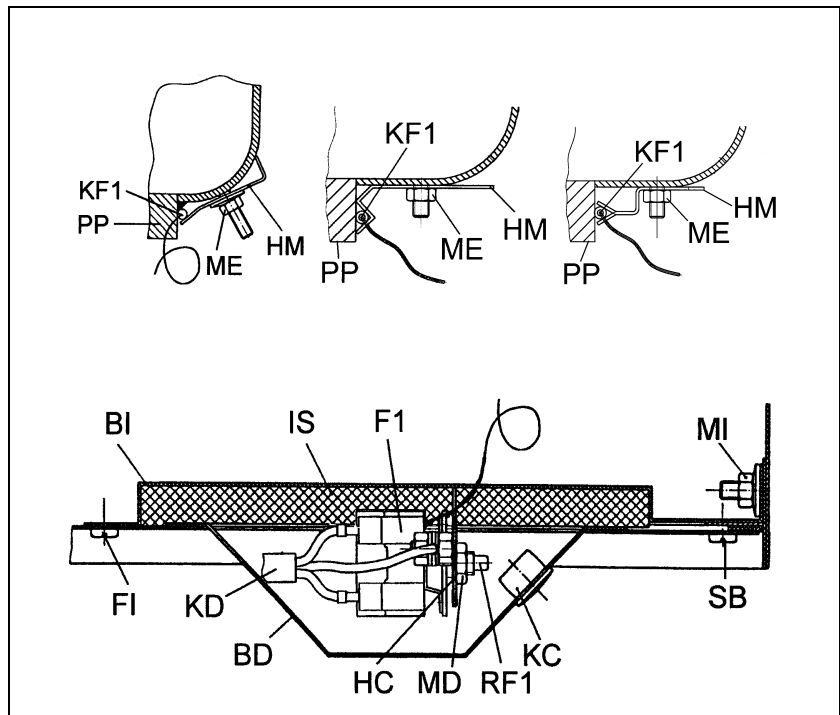
The purpose of the safety thermostat is to protect the electric heating from overheating. It switches the heating

off when a temperature of  $360 \pm 18^\circ\text{C}$  is attained. The thermostat switch is in the base plate of the pan.

Problem	Reasons/Action
The safety thermostat (F1) has responded.	Possible causes: - Control fault - Capillary tube fitted to (F1) is broken - Food temperature sensor (B1) or the bottom temperature sensor (B2) is not fitted correctly (no contact) - Contactor is jammed - Attachment and local position of the sensor (F1) has changed. Identify and remedy the cause or replace the relevant part.
If the capillary tube of the safety thermostat is defective, the function of the boiling pan is blocked.	Replace the thermostat.
If the ambient temperature of the thermostat decreases under $-10^\circ\text{C}$ (transport or stocking in winter) the thermostat switches off and the function of the boiling pan is blocked.	Reset the thermostat at room temperature.

**Resetting:** If the thermostat responds, the red button (RF1) will jump out and the heating will cut out. After the cause of this response has been remedied, the red button is pressed in again and the appliance is then ready for use again. The red button can be accessed from outside by removing the plastic plug (KC) from the bottom plate (BD) of the pan.

**Removal:** Set the pan in the fully tilted position. Remove the bottom of the pan cladding as described in § 1.5 by releasing the screws (SB). Also take off the panel (BI) by removing the two nuts (MI) and the screws (FI) as well as the insulation (IS) on the bottom plate. Disconnect all electrical cable connections (KD). The safety thermostat can be removed from the holder (HC) by taking off the nut (MD).



In order to remove the capillary tube sensor, it is necessary to take off the insulation panel (IB), the pan Insulation (IA) as well as the radiation panel (IR). This is done as described under the section «Electric heating». The capillary tube sensor is attached to the rear of the bottom plate (PP) of the pan in the middle by a retaining clip (HM). The sensor can be removed by releasing the nut (ME).

**Installation:** Proceed as described under «Removal» but in the reverse order. When fitting the retaining clip (HM), ensure that the sensor (KF1) is in close contact with the bottom plate and that the capillary tube (KR1) is positioned in such a way that it cannot touch the electrical contacts under any circumstances.

## FOOD SENSOR (B1)

The food sensor (B1) is located on the front wall of the pan roughly in the middle.

### PREVIOUS DESIGN

The active part of the sensor is pressed against the pan by a retaining clip.

#### Test

Disconnect the sensor cable from the control print. Measure the resistance with an ohmmeter at the ends of the cables. They should show a resistance of  $1097\Omega$  at  $25^{\circ}\text{C}$ .

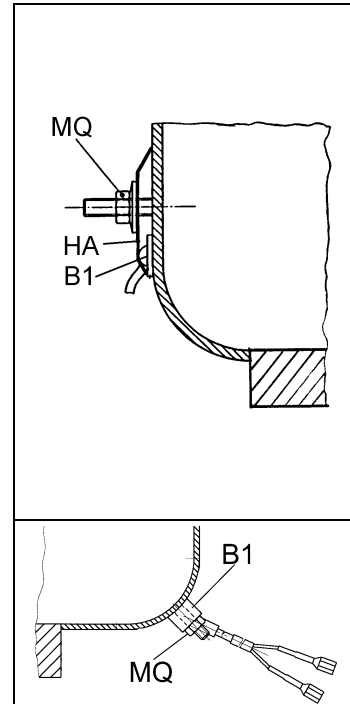
**Removal:** Remove the front wall of the pan cladding (see § 1.5). Release the nut (MQ) and withdraw the sensor (B1) from the retaining clip (HA). Dismantle the switch panel (F) on the right-hand console as described in § 1.5. Disconnect the sensor cable at the J15 push-on connections on the control print (SP). Attach a strong cord to the end of the cable. Pull the cable out of the appliance through the pan pivot. Take the cord off the cable and leave it in the appliance.

**Installation:** Attach the cord well to the end of the cable on the new sensor and pull the cable through the appliance again. Proceed as described under "Removal" but in the reverse order. Make sure that the flat side of the sensor is pressed well against the pan with heat conducting paste (Rüeger/Crissier RTP/II).

Following replacement, the sensor must be retrimmed as described under «Trimming».

### NEW DESIGN (from 10/99)

The sensor has a hole, is located on a bolt and fastened in place with a nut (MQ). It can be removed and fitted by releasing and tightening the nut (MQ). For all other aspects please refer to "Previous design".



## BOTTOM SENSOR (B2)

The bottom sensor is inserted roughly in the middle of the pan bottom. The active part of the sensor protrudes into the pan bottom. Bottom temperature is acquired by using test 5 (see «Test functions»).

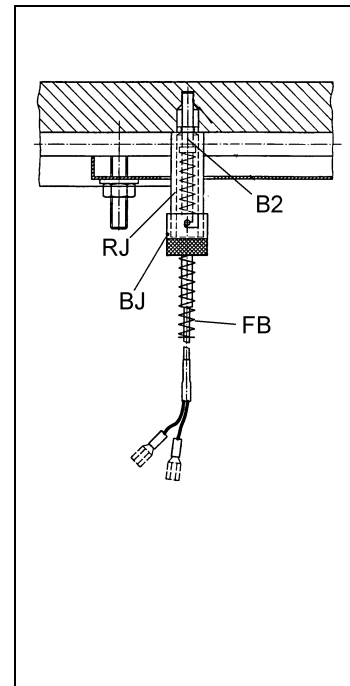
#### Test

Disconnect the sensor cable from the control print. Measure the resistance with an ohmmeter at the ends of the cables. They should show a resistance of  $1097\Omega$  at  $25^{\circ}\text{C}$ .

**Removal:** Remove the bottom of the pan cladding (see § 1.5). It is not necessary to remove the pan insulation to take out the sensor. The sensor (B2) is attached by a sleeve (BJ) with a bayonet fitting to the protection tube (RJ). Remove by pressing the sleeve (BJ) and twisting it counter clockwise. Remove the switch panel (F) on the right-hand console as described in § 1.5. Disconnect the sensor cable at the J16 push-on connections on the control print (SP). Attach a strong cord to the end of the cable. Pull the cable out of the appliance through the pan pivot. Take the cord off the cable and leave it in the appliance. The protection tube (RJ) cannot be removed.

**Installation:** Attach the cord well to the end of the cable on the new sensor and pull the cable through the appliance again. Proceed as described under "Removal" but in the reverse order. Make sure that the tip of the sensor is pressed well against the pan with heat conducting paste (Rüeger/Crissier RTP/II). The position of the sleeve (BJ) can be altered by twisting the spring (FB) and should be positioned with a gap of approximately 70 mm from the end of the sensor to allow the sensor to be pressed against the measuring point with enough force.

Following replacement, the sensor must be retrimmed as described under «Trimming».



## ELECTRIC HEATING (EI, EA)

The electric heating system (5 items (EI) on all types inside and 1 item (EA) as a loop around the perimeter) are fitted underneath the pan bottom and transmit the heat by radiation and conduction.

Problem	Reasons
Pan refuses to heat up	<ul style="list-style-type: none"> <li>- Safety thermostat in the jacket has responded. Fault is displayed as error message E10.</li> <li>- End switch (ES) is faulty, no longer in the correct position, no contact; screw (SZ) is no longer in the correct position.</li> </ul>
Pan heats up too slowly	<ul style="list-style-type: none"> <li>- Heating is faulty</li> <li>- Contactor is faulty</li> <li>- Wiring is loose (e.g. one phase at connection)</li> </ul>
Contactor hums or chatters	<ul style="list-style-type: none"> <li>- Contactor is dirty or faulty (replace)</li> </ul>

If heating elements fail, the entire period that the appliance has been on can be obtained from the control system by invoking parameter PNo. 1.6.3 so that conclusions on early failure or long-term faults can be drawn. After replacing the heating, reset the parameter value of PNo. 1.6.3 to 0.

### Testing

Measurement of the electrical resistances of the individual heating loops (measured at both plugs of a heating loop) with an ohmmeter with the appliance completely switched off and comparisons with the nominal values (please refer to the table below for details). Access to all the heating connections is gained by removing the front wall panel of the pan as described in § 1.5.

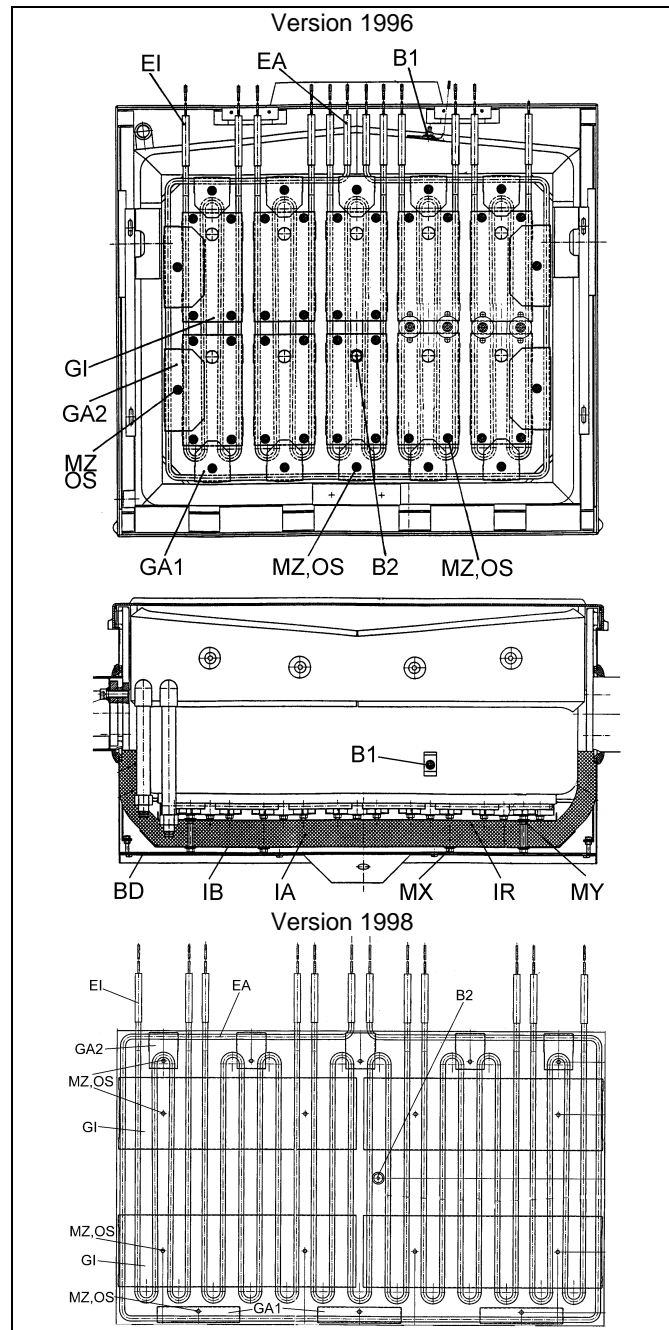
### Removal

In the case of design A of the cooling water system first remove the water pipes (LD1) and (LD2) from the left pivot by removing the screws (HD) and the two retaining disks (HT) and turn out the pipes (see § «FU2.7. Cooling Water System»). Turn the pan completely, i.e. by rotating it 180°. This is done by disconnecting the tilting drive and propping (see § FU1.3). Take off the bottom of the pan cladding (BD) as described in § 1.5. Unscrew the nuts (MX) with which the panel (IB) that holds the insulation (IA) is attached. Remove the panel (IB) and the insulation (IA). Remove the nuts (MY) and remove the radiation panel (IR). Proceed as follows to replace a heating element (EI) or (EA): Disconnect the electrical connections, remove the clips for the inner heating element (GI) or for the outer heating element (GA1) and (GA2) by taking off the relevant nuts (MZ) and spring washers (OS), then remove the heating element from the bottom of the pan.

### Installation

Proceed as described under "Removal" but in the reverse order. Please observe the following points during assembly:

- Clean the threads of the heating element fixing screws with a wire brush and lubricate with Molykote paste P37 (Dow Corning)
- Fully tighten the nuts (MY) with their lock washers (OS) and then slacken by  $\frac{3}{4}$  of a turn (relieve).



Appliance	FET 060, UET 060/090	FET 080, (FET 100) UET 100/150	FET 100, UET 100/150
Wattage per heating element W	2000	2500	3000
Nominal resistance (cold) $\Omega$			
Voltage 200 V	20	16 (16)	13,3
Voltage 230 V	26,5	21,2	17,6
Voltage 240 V	28,8	23	19,2
Voltage 254 V	32,3	25,8	21,5

Deviations in output or resistance from the manufacturing tolerance can amount to +5/-10 %.

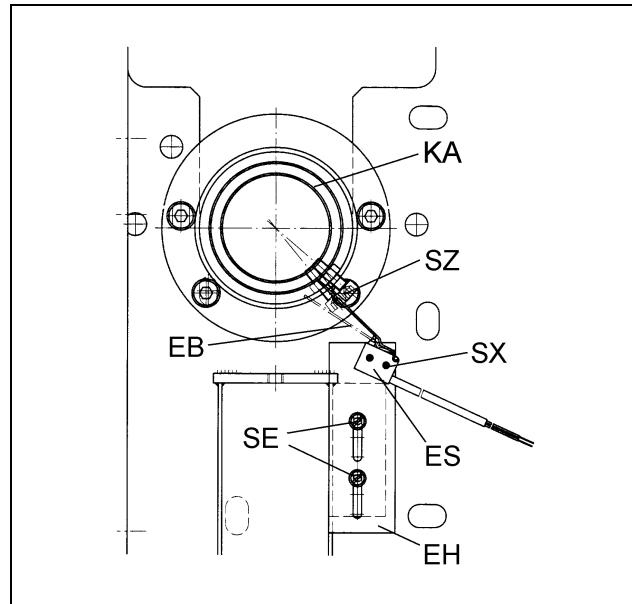
### END SWITCH (ES)

The end switch is located in the right-hand console and serves to switch off the heating when the pan is tilted from its horizontal position. On the tilting pivot, there is a protruding screw which operates the end switch.

#### Setting

Insert the screw (SZ) into the pivot (KA) and secure it with a lock nut. Fix the end switch (ES) securely to the holder (EH) with the two screws (SX). Set the pan horizontal. Slide the holder (EH) vertically until the lever (EB) trips the switch. The switching action is clearly audible. Tighten the two screws (SE) firmly in this position. The end switch must switch off when a tilting angle of 10 degrees is reached.

**Removal/Installation:** Remove the screws (ES). Resetting is necessary after replacing the switch.



### TERMINALS

#### Removal and installation

The terminal rail is located in the right-hand console and can be accessed from above after removing the cover (A) as described in § 1.5. Normal terminals are only clipped into the rail and can be released with the help of a screwdriver. The earth terminal is also attached by a central screw which has to be released during removal.

### CONTROL FUSE (P1)

#### Removal and installation

The fuse (either one or two may be fitted) for the pan control print is located in the right-hand console on the terminal assembly. Take off the cover (A) as described in § 1.5. Open the cover of the fuse clip by flipping it open on one side. Take out the fuse sideways or insert a new one. The fuse is located loosely in the holder. Reclose the terminal cover.

### CONTACTORS (K)

**Removal:** Take off the cover (A) as described in § 1.5. The terminal assembly and the contactors are mounted on a common support plate. Unscrew the nuts with which the support plate is attached to the frame. Pull the support plate upwards out of the console and insert the lower part of the plate into the cutout in the console frame. The support plate then remains in an elevated position above the console which allows easy access to the contactors from the side. Detach the cable connections from the contactor. Release from the snap fitting in the middle of the foot using a screwdriver and take off at an angle on one side.

**Installation:** The contactor is simply clipped onto the rail with a snap fitting. Cable connections. Proceed as described under "Removal" but in the reverse order.

### HEATING RESISTOR (E11)

This heating is used for protecting the control system against condensing water. It is always switched on when the appliance is connected to the supply.

#### Removal and installation

The heating is mounted to the console behind the control panel. Remove the control panel (F) and the cover (A) as described in §1.5. Detach the electrical connections. Pull the heating out of the two clamps.

### POWER ISOLATOR (H)

Only optionally available in the lower part of the switch panel.

#### Removal

Remove the switch panel (F) as described in § 1.5. Detach the electrical connections from the switch. Release the screw in the center of the knob and pull off the knob. Take off the panel cover with the setting displays. Remove the 4 screws, nuts and washers with which the switch is attached to the panel. The terminal plate and the rear part of the switch can now be removed from the switch panel.

Proceed as described under "Removal" but in the reverse order. Ensure that the seal on the switch shaft is undamaged; the V-shaped notch on the switch shaft must be on the right; the terminal plate must be aligned precisely in the switch panel; fit the panel cover so that 0 is at the top and I is on the right; fit the handle so that the window is at the top to reveal the 0.

## FU1.3. TILTING

### A. MOTOR TILTING

All parts of the tilting mechanism (control system, tilting motor, tilting switch) are located in the left-hand console.

Problem	Reasons
Tilting drive refuses to operate	<ul style="list-style-type: none"> <li>- Control fuse is faulty</li> <li>- Water in the controls (general)</li> <li>- Fault on the print</li> <li>- Potentiometer on the switch is disconnected or faulty</li> <li>- Tilting motor (gearbox, shaft) is faulty</li> <li>- Tilting control is not being released by the pan controls. The parameter PNo. .1.6. programmed into the pan controls must be correctly set at 1.</li> </ul>

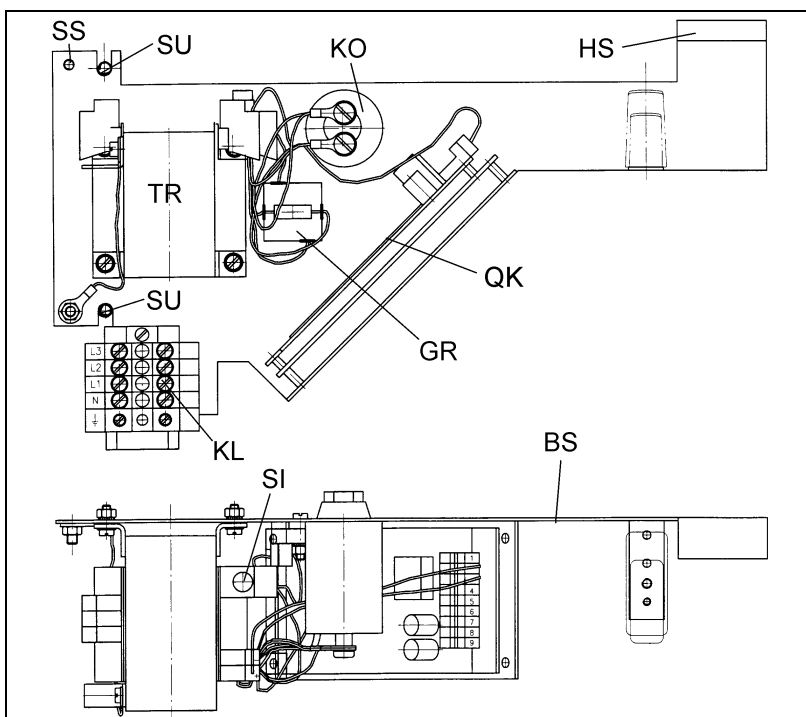
### CONTROL SYSTEM (KS)

#### PREVIOUS DESIGN

This consists of the electrical terminals (KL) with a fuse (SI), a transformer (TR), a rectifier (GR), capacitor (KO) and the control print (QK). All parts are compactly mounted on a sheetmetal support.

**Removal:** Remove the cover (A), the front panel (F) and, if possible, the sidewall (S) as described in § 1.5. Remove the guard which is positioned above the controls to keep water off them by undoing the screw (SS) and withdrawing the plate on the right from the mounting. Disconnect the electrical leads. Take away the two screws (SU). Pull the entire sheetmetal support (BS) out of the right-hand mounting (HS) and take the controls out from the top.

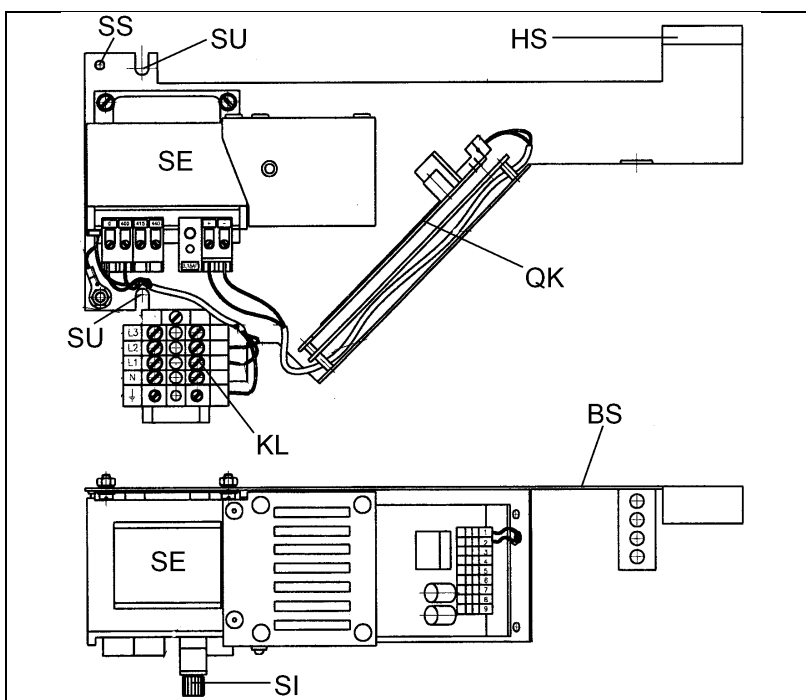
**Installation:** Proceed as described under "Removal" but in the reverse order.



#### NEW DESIGN (from 10/99)

The elements of the previous design (transformer, rectifier and condenser) are built together to one power supply unit (SE). The control board (QK) is also new and has 10 contacts (no. 10 stays empty).

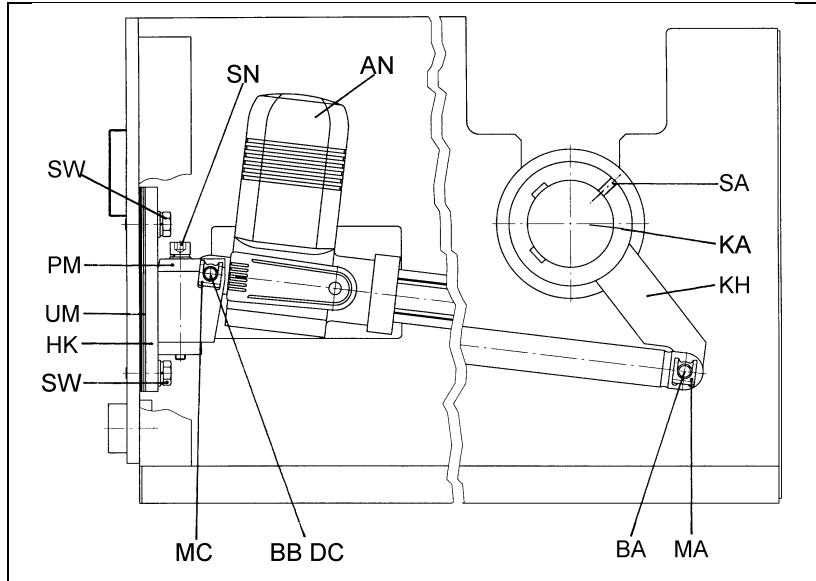
**Removal and installation**  
see «Previous Design».





## TILTING MOTOR (AN)

**Removal:** Remove the cover (A), the front panel (F) and, if possible, the sidewall (S) as described in § 1.5. Set the pan in the horizontal position. Prepare a piece of timber that is approx. 2 cm longer than the distance from the floor to the lower edge of the pan cladding. Tilt the pan a little, stand the timber at the rear by the edge of the cladding and tip the pan into the horizontal position until the edge rests on the timber. This releases the tilting motor spindle from any torque from the pan. Remove the two plate nuts (MA) and the bolt (BA) from the motor spindle. Power the motor spindle into the fully retracted position. Disconnect the motor leads from the print.



Remove the screw (SN) and its washer. Remove the plate (PM). Raise the tilting motor at the back and take it out of the console. Also remove the bolt (BB) and the spacer (DC) by removing the nuts (MC). Dismantle the tilting handle (KH) from the tilting shaft (KA) by undoing the screw (SA) and pulling the handle from the shaft.

**Installation:** Proceed as described under "Removal" but in the reverse order.

**Adjustment:** it is only possible to adjust the horizontal position of the pan precisely by varying the packing (UM).

**Procedure:** Remove the cover (A) as described in § 1.5.

The entire drive must be fully assembled. Set the pan in the horizontal position. Release the two screws (SW).

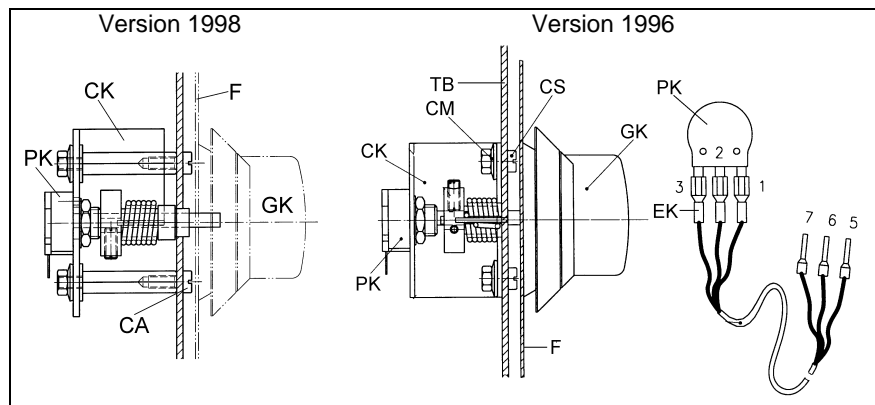
The moment of force on the pan will draw the mounting (HK) away from its attachment point. This allows the thickness of the packet of packing (UM) to be changed. The packing pieces have slots, which allows them to be inserted or removed from the side. Adding additional pieces (UM) will increase the tilting angle to the back while removing packing pieces (UM) will increase the tilting angle to the front. Adjustment is correct when the pan is exactly horizontal when the motor spindle is fully extended. After setting, the screws (SW) with the washers must be retightened firmly.

## SWITCH (CK)

From the neutral position 0, the switch can be turned to the right or to the left for the two tilting directions. When the switch is released, it is returned to the 0 position by a spring. No repairs should be made to the switch itself.

### Removal

Pull the tilting switch knob (GK) off the panel front. Remove the front (F) as described in § 1.5. Detach the electrical connections (EK) from the potentiometer (PK).



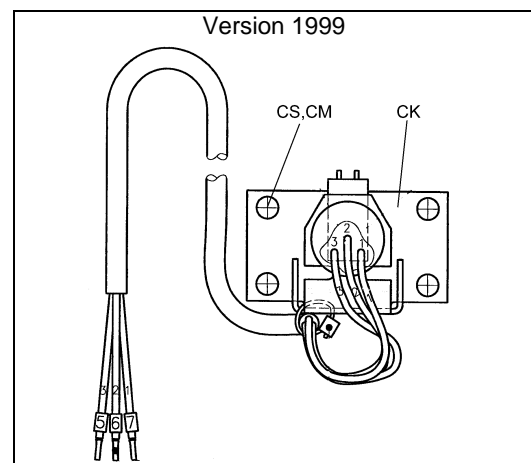
Take off the support plate (TB) by removing 4 nuts from the front. Take off the complete switch (CK) by removing the 2 nuts (CM) and screws (CS) resp 2 screws (CA) from the support plate.

### Installation

Proceed as described under "Removal" but in the reverse order. Ensure that the electrical connections are made as shown. The switch knob must be pressed firmly against the front panel to ensure that the seal bears evenly all round.

### Version 1999

To exchange a switch against the version 1999 proceed as following: Install a new support plate (TB), use 4 screws (CS,CM) to fasten the switch. The flat part of the shaft must be positioned downwards.



## B. MANUAL TILTING

All parts of the tilting mechanism are located in the left-hand console.

Problem	Remedy
Handwheel is hard to turn	Lubricate the spindle (5)
Handwheel is hard to turn, the mechanism makes noise	The nut is faulty $\Rightarrow$ exchange the nut (6) and possibly the spindle (5)

### LUBRICATION

Remove the cover (A) of the left console as described in § 1.5. Lubricate the spindle (5) on its full length once a year with Klüber Lubrication CATENERA KSB6.

Only lubricate parts (7) and (10) when these parts got disassembled or exchanged against new parts.

### TILTING MECHANISM

Without disassembling it is not possible to remove the complete tilting mechanism as one part from the frame of the console.

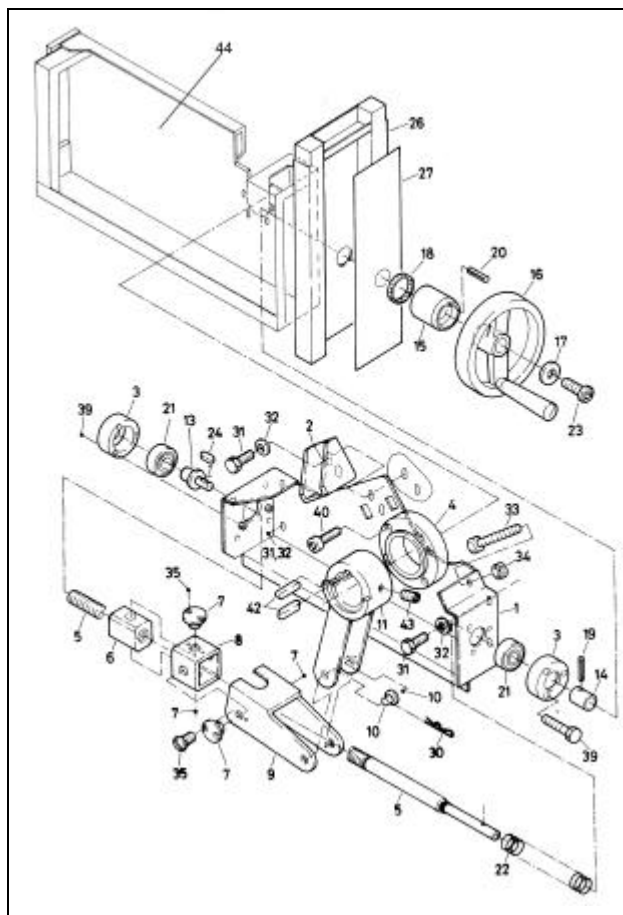
### SPINDLE (5), NUT (6), SPRING (22), ROLLER-BEARINGS (3)

#### Preparation

Remove the handwheel (16) by taking off the screw (23) and disk (17). Pull all parts handwheel (16), rose (15) and sealing (18) off the spindle (5). Remove the cover (A) and switch panel (P) resp. (26) of the left console as described in § 1.5.

#### Removal

Tilt the pan about 45° forward and rest the rear edge of the cladding on a timber. This releases the tilting mechanism from any torque from the pan. Remove the screws (39) and flange (3) on the front side of the spindle. Attach the handwheel (16) to the spindle and screw out the spindle by turning in clockwise direction. Take the spindle (5) out of the box (1). If necessary pull out the spring (22) to the backside. For removing the nut (6) first take away the upper screws (35) and the bearing (7), then turn the nut by 180° and take away the other parts (35) and (7).



Take the nut out of the gimbal ring (8) to the backside. The bearings (21) are pressed to the spindle (5) resp. the shaft (13). By removing the screws (39) and the flanges (3) on the back side the bearing with the shaft can be taken out. The bearings (21) can be removed from the shafts by warming it with a drier.

### LEVER (9), TILTING ARM (11), BEARINGS (10)

Remove the rotation link as described in § FU6, if existing. Remove the buffer (2) by taking off the screws (31) and washers (32). Turn out the screw (43). Tilt the pan about 120° forward and rest the front edge of the pan on a timber. Remove the safety elements (30) and the bearings (10). Take out the lever (9). Take the tilting arm (11) off the pan shaft by the help of a large screw-driver.

### BOX (1)

By removing the screws (31) and washers (32) the box (40) will come off the frame of the console.

### Installation

Proceed as described under "Removal" but in the reverse order. Special attention must be given to the correct installation of the wedges (42) and (24), the spring (22)

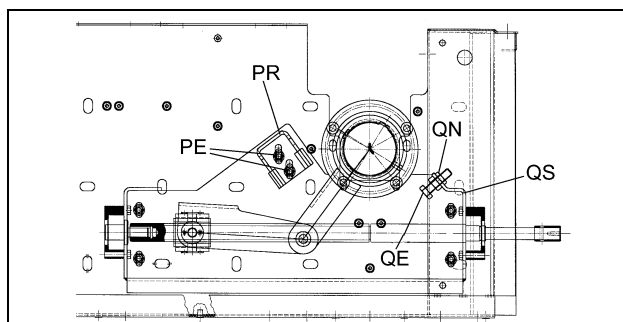
and the sealing (18). Before putting the bearings (21) onto the shafts, warm them up with a drier.

### Adjustments

The two end positions «tilted» and «horizontal» are determined by end settings.

The «horizontal» end position of the pan can be adjusted by moving the two screws (QE) and fixing them onto the support (QS) by the nuts (QN). The correct position is found by placing a spirit level on the edge of the pan.

The full «tilted» end position of the pan is given by the buffer (PR). Its position can be set by releasing and fastening the two screws (PE).



## FU1.4. LID (D)

### LID HINGE (DG)

#### Servicing

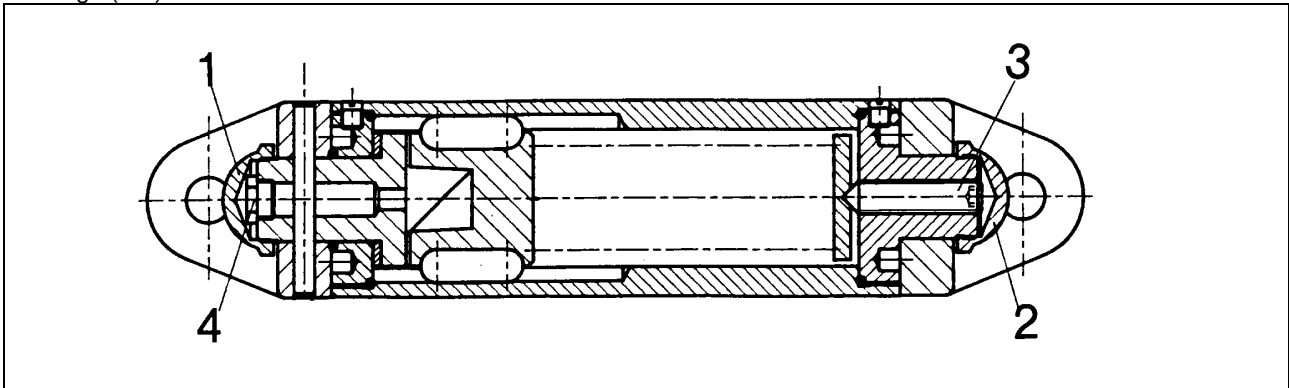
After a lengthy period of use, the lid may prove stiff to operate. This can be remedied by lubricating it. Procedure: Close the lid (D). Unscrew the domed nut (1) on the left-hand side. Inject approx. 20 grams of special fittings grease through the nipple (4) with a grease gun. Refit the domed nut (1). Open and close the lid several times (do this smoothly) with the appropriate pauses to allow the grease to distribute itself.

#### Adjustment

The lid hinges are supplied lightly pretensioned and can be adjusted subsequently. Unscrew the nuts (2) on the right when viewed from the front. Insert the long side of a

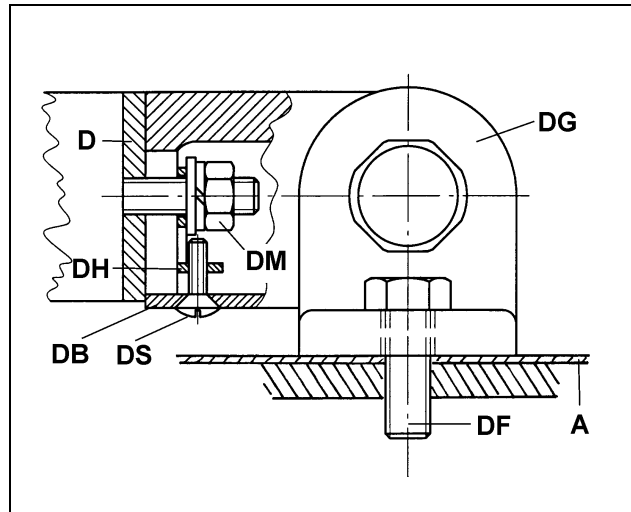
4 mm Allen key into the screw (3). With the lid open, increase the tension by turning the key clockwise. After each turn, check whether the lid is counterbalanced or not. If not, continue to increase tension. Approximately 8 turns are possible until the next highest capacity is reached. If the lid hinge blocks when the lid is being closed, turn the Allen key counterclockwise and reduce the tension. The correct tension is achieved when the lid remains open on its own at an angle of  $\geq 15^\circ$  and closes by itself due to its own weight at an angle of  $< 15^\circ$ . After the lid has been correctly adjusted, the nut (2) is screwed on again.

Lid hinge (DG)



**Removal:** Lids may be fitted with one or two hinges. The procedure is the same in both cases. Fully open the lid (D). Remove the screw (DS) as well as the plate (DB). Unscrew the two nuts (DM) and remove the washers as well as the retaining plate (DH). The lid is now separated from the lid hinge. The lid hinge can be removed from the cover plate (A) by removing the two screws (DF) with the washers.

**Installation:** The lid hinges are supplied in the «Lid open» position. A lid hinge may only be moved when it is fixed in position. If it is not fixed in position, it may cause injury by suddenly springing back if incorrectly handled. The front of the left-hand mount has a marking (capacity). This figure must point to the front when the lid hinge is fitted. First screw the lid hinges to the cover plate but do not tighten them yet. Then fit the lid to the hinges in the open position. Tighten the nuts (DM) firmly. Align the lid to the cooking pan and then tighten the screws (DF) fully.



## FU1.5. MIXING UNIT

### Maintenance

Check all sealed points and joints for any leakage. Replace seals if necessary.

Descale the spray head.

### Removal

Unscrew the swiveling arm (TM) with its seal from the valve body (KK). Remove the cover (A) from the unit in accordance with § 1.5. Disconnect the flexible hoses (FR) with their seals from the screw connections (QM).

Variant a:

Slacken the screws (VM) on the ring (ZM).

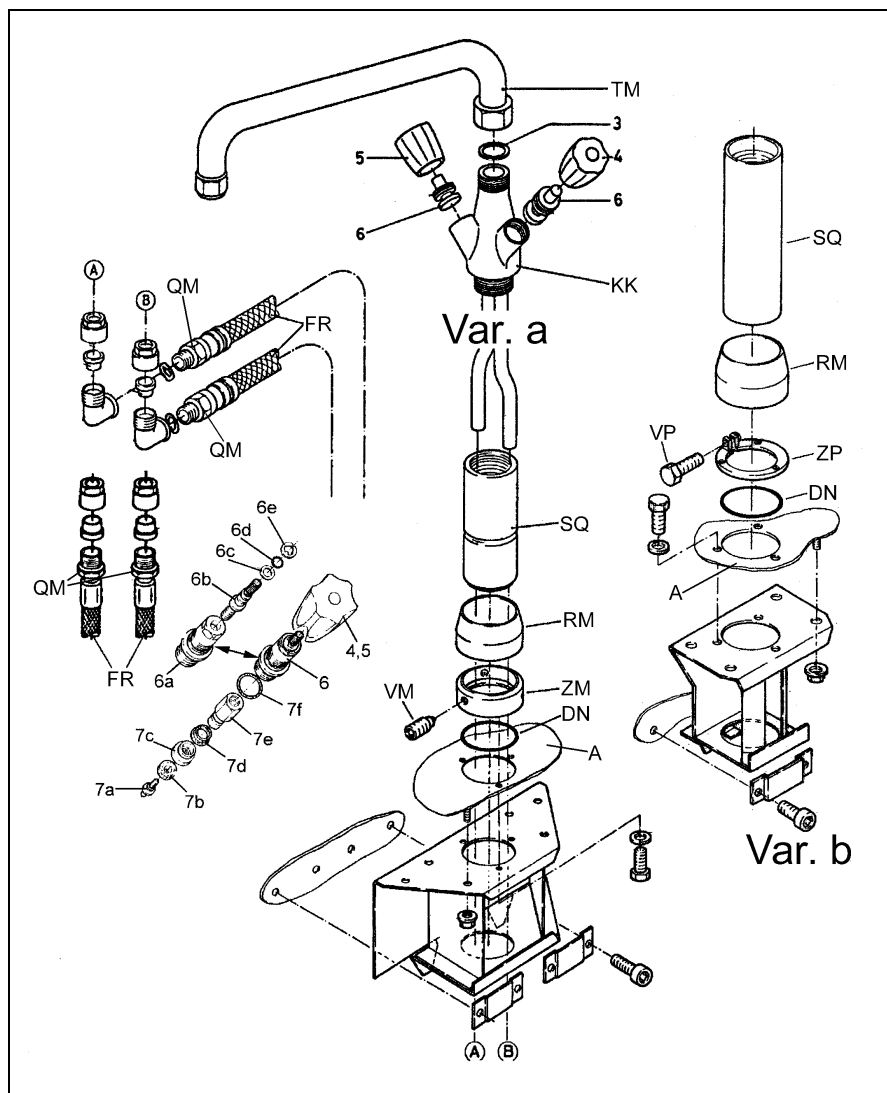
Variant b:

Slacken the screw (VP) on the ring (ZP).

Withdraw the column (SQ) from the cover spigot. Remove the collar (RM) from the column. Care for the seal (DN). Further dismantling: pull off the valve knobs (cold water = blue and hot water = red). Unscrew the valve inserts with the integral seals. Parts (3) to (7).

### Installation

Proceed as above but in the reverse order. N.B.: twist the mixing unit to the correct position, i.e. both valve knobs should face forward.



## FU1.6. PAN

### COMPARTMENT

**Removal:** On both sides: take off the covers (A) and the switch panels (F) in accordance with § 1.5.

Left-hand side: take off the cover and the tilting control system in accordance with § FU1.3. Support the pan at the rear with a balk of timber and disconnect the tilting drive at the front by removing the sheet nuts (MA) and the bolt (BA). Disconnect the stirrer motor electric cable from the motor protection switch (MT) (see § FU1.3). Take the tilting handle (KH) off the pivot.

Right-hand side: take off the electrical connections for the electric heating, deaeration valve and the 3 sensors from the contactors or the front panel.

Both sides: Remove the inner walls (W) of the console cladding by undoing 2 nuts inside in the upper part and 2 screws below. Then, on each side, take out the 4 screws (SF) through which the two bearing parts (LB) and (LC) are clamped to the console panels (KP). Withdraw the pan upwards out of the supports in the consoles, either by driving a lift truck upon which a car tire has been placed under the pan and raising it or with a forklift truck by lifting it on a rope looped around the pivots. The inner walls (W) can then be taken off together with the pivot collars.

**Installation:** Proceed as described under "Removal" but in the reverse order. The left-hand bearing is a rigid bearing and has only one ring (AS) on both sides.

### Pivot height adjustment

The height of the appliance's tilting pivot (AA) can be adjusted as follows:

- Slacken the 4 screws (SF) on the bearing.
- Slacken the lock nut (KN).
- Screw the screw (RT) in or out as required to obtain the correct height.
- Tighten the lock nut (KN).
- Retighten the 4 screws (SF).

### BEARINGS, PIVOTS

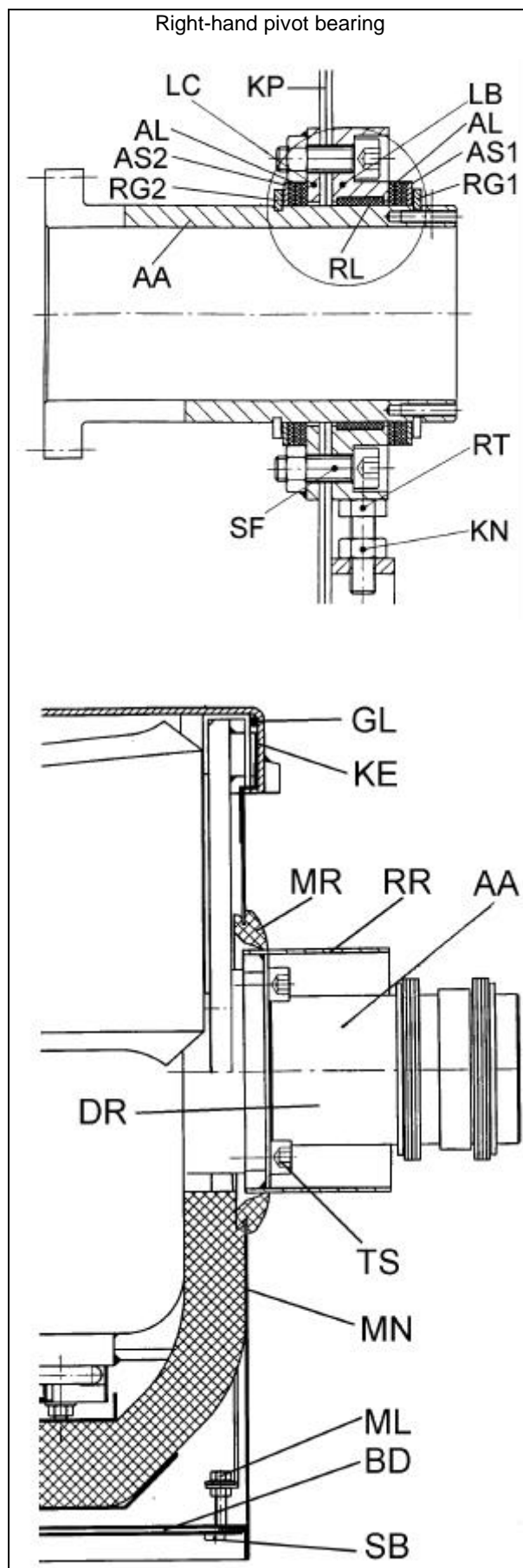
**Removal:** Remove the retaining ring (RG1) using the special pliers and pull the washer (AS1) as well as the axial bearing elements (AL) off the pivot shaft (AA). Take off the bearing part (LB) with the radial bearing (RL), plus the flange (LC) as well as the rear washers (AL), the ring (AS2) and the retaining ring (RG2). Further dismantling is done by taking out the 4 screws (TS). This allows the following parts to be removed one after the other: the tube (RR), the pivot shaft (AA), the spacer (DR) and, from the jacket (MN), the collar (MR).

**Installation:** Proceed as described under "Removal" but in the reverse order. The left-hand pivot bearing is a rigid bearing and only fitted with a ring (AS1) and (AS2) on both sides. The axial tolerances of the pan are equalized on the right-hand bearing. A total of 6 rings (AS) are used; these may consist of 3 rings on both sides or, dependent on the situation, 2 may be used on one side and 4 rings on the other side.

### CASING (MN)

**Removal:** After dismantling the tilting pivots (AA) and removing the base (BD) as described in § 1.5, the jacket (MN) can be pulled out of the pan flange (KE) by taking off the 4 nuts (ML).

**Installation:** Lay the rubber cord (GL) into the groove of the pan flange (KE) and slide the jacket (MN) into the pan flange (KE). Tighten the nuts (ML).



**PAINT FINISH**

The surface of the appliance that is directly affected by the heating (the lower surface of the cooking space) receives a special black finish at the factory. This finish protects the floor from corrosion and improves the flow of heat in the cooking space. To repair damaged areas of the finish, the original finish is available in the form of an

aerosol. The areas to be treated must be dry, clean and free of grease. Drying time is approximately 1 hour.

Paint finish: Dupli-Color, Supertherm 800°C, toxic classification 5. Available from : Kurt Vogelsang AG, CH-8604 Volketswil or from specialist suppliers.

## FU1.7. APPENDIX

### UNIVERSAL CONTROL DESCRIPTION OF PARAMETERS

PNr.	Parameter number	NA	Not yet activated
GS	Default setting	Z, D	Value of display
B	Setting range	X	Parameter value to be programmed in

PNr.	GS	B	Designation	Description / Setting
.1.	0	0/1	Temperature display	0 = display in °C 1 = display in °F
.2.	0	0/1	Start of timer	0 = timer starts after reaching the setting temperature 1 = timer starts instantly after starting the cooking process
.3.	1	0/1	Correction of the displayed actual value of the food temperature	0 = exact display of the actual value of the food temperature 1 = difference between actual value and setting is halved
.4.	0	0/1	Energy optimization system EO	0 = EO out of operation 1 = EO in operation
.5.	1	0/1	Deaeration of the jacket	0 = deaeration out of operation 1 = deaeration in operation
.6.	1	0/1	Heating with tilting	0 = heating works when pan is tilted 1 = heating is switched off when pan is tilted
.7.	1	0/1	Excess temperature safety thermostat	0 = safety thermostat out of operation 1 = safety thermostat in operation
.8.	0	0/1	Pressostat in the jacket	0 = pressostat out of operation 1 = pressostat in operation
.9.	0	0/1	Pressure switch in the food compartment	0 = switch out of operation 1 = switch in operation
.10.	1	0/1	Starting time	0 = delay time setting; the cooking process starts after setting time runoff 1 = real time setting; the cooking process starts with input clock time
.1.1.	1	0/1	Cooking with SOFT setting	0 = SOFT setting out of operation 1 = SOFT setting in operation
.1.2.	0	0/1	Automatic steam condensation	0 = steam condensation out of operation 1 = steam condensation in operation
.1.3.	1	0/1	Buzzer	0 = buzzer out of operation 1 = buzzer in operation
.1.4.	0	0/1	Setting of max. food temperature	0 = setting is possible above the calculated boiling temperature 1 = setting is only possible up to the calculated boiling temperature
.1.5.	0	0/1	Actual value of max. food temperature	0 = no limitation of the display for the food temperature 1 = the display arrives only the calculated boiling temperature
.1.6.	1	0/1	Lid position while tilting	0 = tilting is possible only when lid is open 1 = tilting is independent of the lid position
.1.7.	1	0/1	Function of stirring system and lid position	0 = stirring is only possible when lid is closed 1 = stirring is independent of the lid position
.1.8.	1	0/1	Function of stirring system and tilting switch	0 = stirring is dependent on tilting switch actuation 1 = stirring is independent of tilting switch actuation
.1.9.	1	0/1	Power settings and boiling temperature	0 = no power settings above boiling temperature possible 1 = power settings possible above boiling temperature
.2.0.	0	0/1	Dependence between power settings and food temperature	0 = the distribution of the power settings is dependent on temperature 1 = over the whole range the distribution of the power settings is independent of temperature (standard control)
.2.1.	1	0/1	Electric supply frequency	0 = 60 Hz 1 = 50 Hz

PNr.	GS	B	Designation	Description / Setting
.2.2.	0	0/1	Electric supply frequency measurement	0 = the programmed frequency will be measured automatically and if necessary corrected 1 = the frequency will be not measured
.2.3.	1	0/1	Reduction of undulation	0 = reduction out of function 1 = reduction in function
.2.4.	0	0/1	Kind of heating	0 = electrically heated 1 = gas heated
.2.5.	1	0/1	Reduction of flicker	0 = flicker disturbances will not be considered 1 = reduction of flicker disturbances according to regulations
.2.6.	1	0/1	Modem connection	0 = modem connection switched off 1 = modem connection switched on
.2.7.	1	0/1	Display of the power settings	0 = display only of the actual temperature 1 = additional display of the power settings above the boiling temperature
.2.8.	0	0/1	Dual-function control for 3-step motor valve	0 = function switched off 1 = function switched on
.2.9.	1	0/1	Deaeration sensor of the jacket	0 = sensor in front of the deaeration valve out of function 1 = sensor in front of the deaeration valve in function
.3.0.	0	0/1	Power setting function of motor valve	0 = Progressive function of power setting switched off 1 = Progressive function of power setting switched on
.3.1.	0	0/1	HOLD function	0 = HOLD switched off 1 = HOLD switched on
.3.2.	0	0/1	HACCP function	0 = HACCP switched off 1 = HACCP switched on
.3.3.	0	0/1	Printer function	0 = Printer switched off 1 = Printer switched on
.3.4.	0	0/1	Stirrer function with open lid	0 = Stirring system switched off 1 = Stirring system switched on
.3.5.	0	0/1	Function of the steam condensation sensor	0 = Sensor switched off 1 = Sensor switched on
.4.9.	0	0 - 5	Appliance code	0 = kettle electrically heated, max. 4 contactors, 3 temperature sensors 1 = kettle directly steam-heated, with 3-step motor valve, 1 temperature sensor 2 = kettle directly steam-heated, with solenoid valve, 1 temperature sensor 3 = pan electrically heated, max. 4 contactors, 2-3 temperature sensors
.5.0.	1	0 - 3	Appliance type	0 = pressure boiling pans 1 = normal boiling pans 2 = pans with digital operation 3 = pans with analogous operation (potentiometer)
.5.2.	1	1 - 32	Communication address	1-32 = addresses for remote control via PC
.5.3.	10	0 - 50	Switching delay time of the contactors	Time interval between 2 contactors when switched on/off in series (1 unit = 100 ms, 50 = 5 seconds)
.5.4.	4	1 - 4	Quantity of switching steps	Number of contactors to be switched on/off in series
.5.5.	5	0 - 40	Release temperature for the timer	Temperature difference in °C between setting and actual value for starting the timer
.5.6.	5	0 - 40	Release temperature for the lamp signaling heating	Difference in °C between setting and actual temperature for the heating lamp changing from intermittently to continuous shining
.5.7.	1	0 - 40	Hysteresis of deaeration valve of the jacket	Hysteresis of temperature margin for «start deaeration cycle» below which a new deaeration cycle starts
.5.8.	15	0 - 20	Openings of the deaeration valve	Max. number of valve openings during heating-up
.5.9.	2	0 - 25	Hysteresis of control in reference to the jacket sensor	Difference in °C between jacket sensor and setting temperature for starting the heating again
.6.0.	1	0 - 25	Hysteresis of control in reference to the food sensor	Difference in °C between food sensor and setting temperature for starting the heating again
.6.1.	1	0 - 25	Hysteresis of control in reference to the pan bottom sensor	Difference in °C between the pan bottom sensor and setting temperature for starting the heating again



PNr.	GS	B	Designation	Description / Setting
.6.2.	30	0 - 100	Max. temperature for switching off the heating	Max. difference in °C between the pan bottom and setting; only in function if appliance is controlled by the food sensor
.6.3.	2	0 - 100	Lower temperature band width 1 for the jacket sensor	Temperature fringe range in °C of the lower band 1; used for flicker algorithm
.6.4.	4	0 - 100	Lower temperature band width 2 for the jacket sensor	Temperature fringe range in °C of the lower band 2; used for flicker algorithm
.6.5.	6	0 - 100	Lower temperature band width 3 for the jacket sensor	Temperature fringe range in °C of the lower band 3; used for flicker algorithm
.6.6.	4	0 - 100	Upper temperature band width 1 for the jacket sensor	Temperature fringe range in °C of the upper band 1; used for flicker algorithm
.6.7.	6	0 - 100	Upper temperature band width 2 for the jacket sensor	Temperature fringe range in °C of the upper band 2; used for flicker algorithm
.6.8.	8	0 - 100	Upper temperature band width 3 for the jacket sensor	Temperature fringe range in °C of the upper band 3; used for flicker algorithm
.6.9.	40	0 - 100	Starting the ramp 1 (only for 3-step motor valve)	Temperature margin % between setting and actual value when starting ramp 1
.7.0.	5	0 - 100	Starting the ramp 2 (only for 3-step motor valve)	Temperature difference % between setting and actual value when starting ramp 2
.7.1.	0	0 - 100	Temp. definition of ramp 1 for normal cooking (only for 3-step motor valve)	Temperature margin % of the difference between setting and actual value of food temperature when the temperature in ramp 1 for normal cooking is defined as to be reached
.7.2.	0	0 - 100	Temp. definition of ramp 1 for SOFT cooking (only for 3-step motor valve)	Temperature margin % of the difference between setting and actual value of food temperature when the temperature in ramp 1 for SOFT cooking is defined as to be reached
.7.3.	0	0 - 100	Temp. definition of ramp 2 for normal cooking (only for 3-step motor valve)	Temperature margin % of the difference between setting and actual value of food temperature when the temperature in ramp 2 for normal cooking is defined as to be reached
.7.4.	0	0 - 100	Temp. definition of ramp 2 for SOFT cooking (Only for 3-step motor valve)	Temperature margin % of the difference between setting and actual value of food Temperature when the temperature in ramp 2 for SOFT cooking is defined as to be reached
.7.5.	10	0 - 100	Integration period (only for 3-step motor valve)	Difference in °C between setting and temperature margin for the food sensor below which the period of integration starts again
.7.6.	1	0 - 100	Hysteresis of the food sensor in reference to steam condensation	Difference °C between actual value and temperature margin (PNo. 1.4.3.), for opening the valve of condensation again.
.7.7.	10	0 - 240	Duration of steam condensation	Max. duration of steam condensation. After this time the valve keeps closed.
.7.8.	30	0 - 240	Duration of periods of the power levels	Definition of the duration of period sec. of levels L1-L9
.7.9.	25	0 - 100	Power level L1	Min. action time % of level L1 in respect to the duration of the period
.8.0.	2	0 - 20	Temperature correction see PNo. . . 3.	Duration of period sec. to switch-off the temperature correction
.8.1.	1.5	0 - 10	Temperature correction see PNo. . . 3.	Extent of decrement in °C per time window for temperature correction (duration see PNo. . 80).
.8.2.	5	0 - 200	Temperature correction see PNo. . . 3.	Duration of period sec. to calculate the temperature derivation
.8.3.	50	0 - 800	Influence of height above sea level on boiling temperature	Input of height above sea level of the installation site in 10 m (500 m above sea level. = 50).
.8.4.	0	0 - 250	Cooking time during boiling in HOLD function	Cooking time during boiling temperature
.8.5.	80	0 - 999	Opening time of the deaeration valve	Opening time in 100 ms of the jacket deaeration valve for each deaeration cycle
.8.6.	30	0-999	Min. closing time of the deaeration valve	Min. closing time in 100 ms of the jacket deaeration valve

PNr.	GS	B	Designation	Description / Setting
.8.7.	40	0-600	Standstill of stirrer during oscillating 1	Standstill period in 100 ms in oscillating level 1
.8.8.	160	0-600	Running time of stirrer during oscillating 1	Running time in 100 ms clockwise rotation in oscillating level 1
.8.9.	160	0-600	Running time of stirrer during oscillating 1	Running time in 100 ms counter-clockwise rotation in oscillating level 1
.9.0.	160	0-600	Standstill of stirrer during oscillating 2	Standstill period in 100 ms in oscillating level 2
.9.1.	160	0-600	Running time of stirrer during oscillating 2	Running time in 100 ms clockwise rotation in oscillating level 2
.9.2.	160	0-600	Running time of stirrer during oscillating 2	Running time in 100 ms counterclockwise rotation in oscillating level 2
.9.3.	86	0-130	Start of deaeration cycle	Temperature in °C below which the deaeration cycle starts
.9.4.	104	0-130	Temperature for opening the deaeration valve	Temperature in °C opening the deaeration valve
.9.5.	800	0-999	Allowed amount of openings of the deaeration valve	10 x display value = admissible amount of openings until alarm display A31 is released
.9.6.	200	0-400	Max. food temperature	Max. temperature in °C (at the analogous input J15) releasing alarm E6
.9.7.	300	0-400	Max. jacket resp. bottom temperature	Max. temperature in °C (at the analogous input J16) releasing alarm E7
.9.8.	-50	-60 bis +200)	Limit of vacuum pressure display	Pressure in 0.01 bar, above which display is active; below the programmed value display shows P0.00
.9.9.	180	0-250	Max. jacket pressure to release alarm	Jacket pressure in 0.01 bar, releasing alarm E8 0 = no alarm will be released
1.0.0.	0	-20 bis +20	Measuring inaccuracy correction of the food temperature sensor	Offset temperature in °C for the measuring inaccuracy correction of the temperature sensor (at the analogous input J15)
1.0.1.	0	-20 bis +20	Measuring inaccuracy correction of the jacket temperature sensor	Offset temperature in °C for the measuring inaccuracy correction of the temperature sensor (at the analogous input J16)
1.0.2.	110	0-140	Setting of jacket temperature sensor for normal cooking	Temperature in °C of lower limit for normal cooking setting
1.0.3.	122	0-140	Jacket temperature for normal cooking setting	Temperature in °C of upper limit for normal cooking setting
1.0.4.	50	0-300	Correction of the temp. difference at the lower fixpoint of the bottom temperature $T_y = 50^{\circ}\text{C}$	$\pm\Delta T$ correction °C at bottom temp. of $50^{\circ}\text{C}$ (refer to «Trimming of temperature measurement»).
1.0.5.	100	0-300	Correction of the temperature difference at the upper fixpoint of the bottom temperature $T_y = 100^{\circ}\text{C}$	$\pm\Delta T$ correction °C at bottom temp. of $100^{\circ}\text{C}$ (refer to «Trimming of temperature measurement»).
1.0.6.	50	0-300	Lower fixpoint for trimming the bottom temperature $T_x = 50^{\circ}\text{C}$	Input of bottom temperature $50^{\circ}\text{C}$ (refer to «Trimming of bottom sensor»).
1.0.7.	100	0-300	Upper fixpoint for trimming the bottom temperature $T_x = 100^{\circ}\text{C}$	Input of bottom temperature $100^{\circ}\text{C}$ (refer to «Trimming of bottom sensor»).
1.0.8.	50	0-300	Correction of error of measurement when measuring the food $T_y = 50^{\circ}\text{C}$	$\pm\Delta T$ correction in °C for food temperature $50^{\circ}\text{C}$ (see chapter «trimming of temperature measuring»).
1.0.9.	100	0-300	Correction of error of measurement when measuring the food $T_y = 100^{\circ}\text{C}$	$\pm\Delta T$ correction in °C for food temperature $100^{\circ}\text{C}$ (see chapter « trimming of temperature measuring»)
1.1.0.	50	0-300	Real food temperature $T_x = 50^{\circ}\text{C}$	Input of food temperature $50^{\circ}\text{C}$ (see chapter « trimming of temperature measuring»)
1.1.1.	100	0-300	Real food temperature $T_x = 100^{\circ}\text{C}$	Input of food temperature $100^{\circ}\text{C}$ (see chapter « trimming of temperature measuring»)
1.1.2.	106	0-140	Jacket temperature setting for SOFT cooking	Temperature in °C setting of lower limit for SOFT cooking
1.1.3.	115	0-140	Jacket temperature setting for SOFT cooking	Temperature in °C setting of upper limit for SOFT cooking

PNr.	GS	B	Designation	Description / Setting
1.1.4.	70	0-140	Actual food temperature setting for SOFT cooking	Temperature in °C setting of lower limit for SOFT cooking
1.1.5.	100	0-140	Actual food temperature setting for SOFT cooking	Temperature in °C setting of upper limit for SOFT cooking
1.1.6.	140	0-200	Max. working pressure in the jacket	Max. admissible overpressure in 0.01 bar in the jacket
1.1.7.	15	0-999	Flicker reduction t-min upper band 1	Min. time sec. the jacket temperature has to remain in the upper band 1
1.1.8.	10	0-999	Flicker reduction t-min upper band 2	Min. time sec. the jacket temperature has to remain in the upper band 2
1.1.9.	5	0-999	Flicker reduction t-min upper band 3	Min. time sec. the jacket temperature has to remain in the upper band 3
1.2.0.	120	0-999	Flicker reduction t-max upper band 1	Min. time sec. the jacket temperature can remain in the upper band 1
1.2.1.	60	0-999	Flicker reduction t-max upper band 2	Min. time sec. the jacket temperature can remain in the upper band 2
1.2.2.	20	0-999	Flicker reduction t-max upper band 3	Min. time sec. the jacket temperature can remain in the upper band 3
1.2.3.	15	0-999	Flicker reduction t-min lower band 1	Min. time sec. the jacket temperature has to remain in the lower band 1
1.2.4.	10	0-999	Flicker reduction t-min lower band 2	Min. time sec. the jacket temperature has to remain in the lower band 2
1.2.5.	5	0-999	Flicker reduction t-min lower band 3	Min. time sec. the jacket temperature has to remain in the lower band 3
1.2.6.	120	0-999	Flicker reduction t-max lower band 1	Min. time sec. the jacket temperature can remain in the lower band 1
1.2.7.	60	0-999	Flicker reduction t-max lower band 2	Min. time sec. the jacket temperature can remain in the lower band 2
1.2.8.	20	0-999	Flicker reduction t-max lower band 3	Min. time sec. the jacket temperature can remain in the lower band 3
1.2.9.	20	0-300	Period of PI control unit	Time period sec. of the incrementable control unit
1.3.0.	15	0-150	Error of PI control unit	Max. error in °C of the incrementable control unit
1.3.1.	10	0-300	Floating time for 3-step motor valve	Min. floating time in 0.1 sec. for opening resp. closing the 3-step motor valve
1.3.2.	300	0-999	Proportional correction of the PI control unit	Setting time in 0.1 sec. for max. proportional correction of the 3-step motor valve
1.3.3.	15	0-999	Integral correction of the PI control unit	Setting time in 0.1 sec. for max. integral correction of the 3-step motor valve
1.3.4.	10	0-499	Increment of the food temperature setting ramp 1 for normal cooking	Temperature in 0.05°C for the increment period of the food temperature setting for normal cooking (for period time, see 1.2.9.)
1.3.5.	2	0-499	Increment of the food temperature setting ramp 1 for SOFT cooking	Temperature in 0.05°C for the increment period of the food temperature setting for SOFT cooking (for period time see 1.2.9.)
1.3.6.	2	0-499	Increment of the food temperature setting ramp 2 for normal cooking	Temperature in 0.05°C for the increment period of the food temperature setting for normal cooking (for period time, see 1.2.9.)
1.3.7.	1	0-499	Increment of the food temperature setting ramp 2 for SOFT cooking	Temperature in 0.05°C for the increment period of the food temperature setting for SOFT cooking (for period time, see 1.2.9.)
1.3.8.	33	0-600	Running time of the 3-step motor valve	On-transition time sec. for complete opening resp. closing of the 3-step motor valve for a nominal running time = 30 sec.; if the running time is LZ ≥ 30 sec. the setting should be approx. 1.1 LZ.
1.3.9.	111	0-300	Changing temperature from bottom to food sensor	Nominal temperature value in °C at which the control system switches from the bottom- to the food sensor and vice versa
1.4.0.	250	0-300	Temperature switching margin for the food sensor	Setting temperature °C of the food sensor at which the heating power is reduced by clock pulses. This prevents the rod heaters from overheating during long simmering periods.

PNr.	GS	B	Designation	Description / Setting
1.4.1.	30	0-600	Max. on-transition time of the heaters	Max. on-transition time in sec. of the heatings. This limitation protects the heaters from overheating.
1.4.2.	0	0-600	Min. switched-off time of the heaters	Min. switched-off time of the heatings. This limitation protects the heaters from overheating.
1.4.3.	102	0-300	Temp. switching margin for steam condensation	Defines the temperature in °C at which the steam condensation valve is switched off or on
1.4.4.	110	0-300	Max. food setting temperature	Max. food setting temperature in °C which can be set by the user
1.4.5.	110	0-300	Max. food sensor temperature	Max. temperature in °C of the food sensor in the range of the power steps L1 - L9
1.4.6.	110	0-120	Max. setting temperature for pressure cooking	Max. setting temperature °C for pressure cooking, which can be set by the user
1.4.7.	0	-20 bis +40	q of SDIRHOFF = $SDIRH - (q + m \cdot dT/dt)$	Reduction of undulation of the actual temperature
1.4.8.	20	0-150	m of SDIRHOFF = $SDIRH - (q + m \cdot dT/dt)$ for food sensor	Reduction of overshooting of the actual temperature during heating up
1.4.9.	3	-40 bis +40	p of SDIRHON = $SDIRH - (1 + p/100) - ISDIRH$	Reduction of undulation of the actual temperature
1.5.0.	-1	-50 bis +50	Max. difference of TDIRH for «ON»	Reduction of undulation of the actual temperature
1.5.1.	1	-50 bis +50	Min. difference of TDIRH for «OFF»	Reduction of undulation of the actual temperature
1.5.2.	20	0-120	Min. duration of heatings switched on	Min. switched-on time in sec. of the gas burner
1.5.3.	60	0-999	Min. off-period after ignition failure	Min. off-period in sec. after the 2nd ignition failure of the burner
1.5.4.	0	0-120	Delay of heating-on during power setting	Defines the delay time of the heating-on times during power setting (gas appliances)
1.5.5.	50	0-100	Min. food sensor temperature	Min. food setting temperature in °C which can be set by the user
1.5.6.	5	0-50	Temperature band width of control print	Temperature band width in °C below the max. admissible temperature of the control print, in which the print can still work for 1 hour
1.5.7.	70	0-100	Max. admissible temperature of the control print	Upper limit of the max. admissible temperature °C of the control print, above which the control unit switches off immediately
1.5.8.	15	0-100)	Difference between bottom sensor and setting during SOFT function	Defines the max. difference (upwards) between bottom temperature and setting during SOFT cooking
1.5.9.	0	-30 bis +30	Difference between boiling temperature and setting during the function power setting and HOLD	Difference °C between calculated boiling point and setting for 3-step motor valves during the function power setting and HOLD
1.6.0.	3	-20 bis +20	Changing temperature difference	Difference in °C between calculated boiling temperature and actual food temperature, at which temperature control changes to power step regulation
1.6.1.	40	0-150	m of SDIRHOFF = $SDIRH - (q + m \cdot dT/dt)$ for the food sensor	Reduction of overshooting of the actual temperature during heating up
1.6.2.	85	0-200	Upper temperature limit of deaeration	Upper limit of max. temperature in °C at the sensor in front of the deaeration valve stopping the deaeration cycle

**Inquiry of cumulated data**

PNr.	GS	EG	Designation	Description; Z, D = Value of display
1.6.3.	0	0 - 39'999)	Time meter for heating «on»	10xZ = total time h, during which one or more heatings have been switched on
1.6.4.	0	0 - 39'999)	Time meter for appliance «on»	10xZ = total time h, during which the appliance has been switched on (control switch on)
1.6.5.	0	0 - 9'999)	Counting of deaerations carried out	Z = total number of complete deaeration cycles = connection with A31 and PNo. .9.5.
1.6.6.	80	0-300	Last setting of temperature	D = last done setting of temperature in °C before the last supply interruption
1.6.7.	30	0-600	Last setting of cooking time	D = last done setting of cooking time in min. before the last supply interruption
1.6.8.	5	0-6000	Last setting of starting time for operation with real and delay time	D = Last done setting of starting time in min. before the last supply interruption
1.6.9.	0	0 - 24*60	Last setting of starting time for operation with real time	D = last done setting of starting time before the last supply interruption; the displayed value is mathematically coded and does not give the right value (hours)
1.7.0.	0	0-999	Last failure code display	D = last existing failure code display before the last supply interruption (failure code without letter in front)
1.7.1.	0	0/1	Last deaeration	0 = before the last switch-off no complete deaeration was carried out 1 = before the last switch-off a complete deaeration was carried out

## 2. TILTING PRESSURE BRAISING PANS UET-E

### 2.1. CONSTRUCTION/ FUNCTIONS

The food is heated by the thick base of the pan under which several electric rod heaters are located. The pans are equipped with an electronic comfort control unit with regulation of the bottom resp. food temperature with or without programming of the cooking time and starting

time. The control system is operated via a membrane keyboard. The pan has a variable-speed tilting facility powered by an electric motor. All types can be fitted with a mixing unit if required.

### 2.2. TECHNICAL DATA

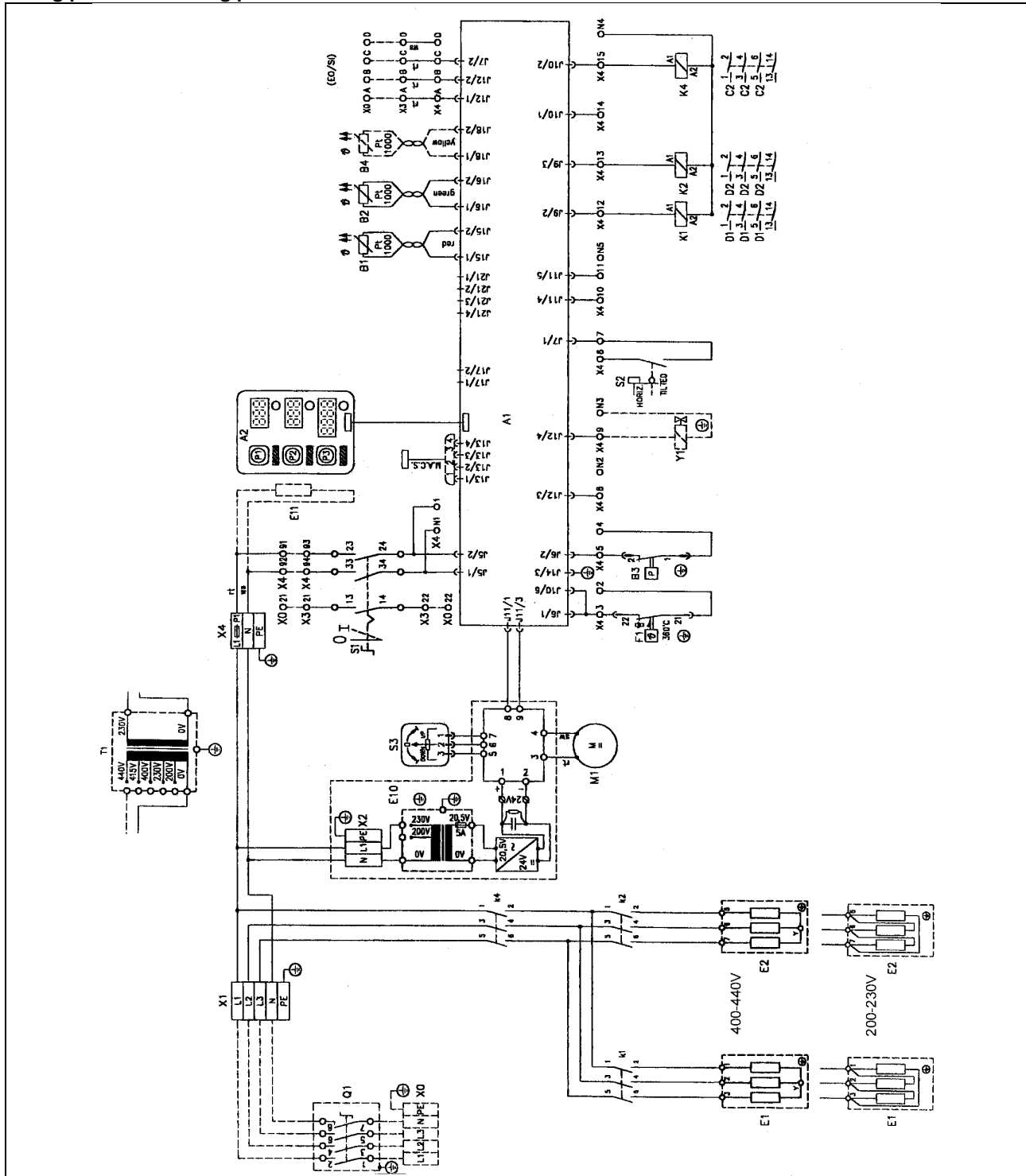
#### Tilting pressure braising pan

Model	Pan bottom made of nickel-chrome plated steel
Style of mounting (optional)	Floor mounting with floor support or wall mounting with console
Control system	Electronic control of pan-bottom resp. food temperature and compartment steam pressure or process control system with additional programmable cooking and starting time with following automatic steam condensation
Protective system	Hoseproof IP X5
Heating up times (see schedule)	Heating up of an empty pan from 20° to an average bottom temperature of 230°C.

Type	UET-060 E	UET-090 E	UET-100 E	UET-150 E
Wattage kW, incl. tilting motor	12.2	12.2	18.2	18.2
Voltage 400V/3~NE Current A	17.7	17.7	26	26
Voltage 415V/3~NE Current A	17	17	25	25
Voltage 440V/3~NE Current A	16	16	23.7	23.7
Voltage 230V/3~NE Current A	30.6	30.6	45.1	45.1
Voltage 200V/3~NE Current A	35.3	35.3	52	52
Net content in lt (= max. capacity)	67	94	104	145
Heating up times empty pan in min.	8	8	11	11
Water filling 100% heating up 20 - 90°C in min.	27	37	39	45
Water filling 50% heating up 20 - 90°C in min.	14	19	20	24
El. tilting motor Wattage kW Voltage Current A	0.2 230V/1~NE, 50 Hz 1			

## 2.3. ELECTRIC DIAGRAM

### Tilting pressure braising pan UET-E



- |     |                           |      |   |       |  |
|-----|---------------------------|------|---|-------|--|
| A1  | Control print             | F1   | Excess-temperature thermostat                 | S3    | Tilting switch                                     |
| A2  | Operating print           | K1,2 | Contactors                                    | X0-.. | Terminals  |
| B1  | Food temperature sensor   | K4   | Safety contactor                              | X4    | Control fuse                                       |
| B2  | Bottom temperature sensor | M1   | Tilting motor                                 | Y1    | Cooling water valve                                |
| B3  | Pressure switch           | Q1   | Power isolator, optional                      | T1    | Single-phase transformer (only for voltage ≠ 230V) |
| B4  | Steam temperature sensor  | S1   | Control switch                                | EO/SI | Connection for energy optimizing system            |
| E   | Heating elements          | S2   | End switch for horizontal position of the pan |       |  |
| E10 | Tilting control           |      |   |       |  |
| E11 | Heating resistor          |      |   |       |  |

The precise specifications of the individual electric components are given in the corresponding parts list.

These must be used in conjunction with the electrical schematic valid for the appliance.

## 2.4. MAINTENANCE CHECK LIST

The same points as those listed in § 1.4 apply, together with the following additions:

Check		Fault & Remedy
Check the <b>pressure lid</b> for perfect operation, shape or damage.	S	see separate check list FU2.4. Set the lid. If irreparably damaged ⇒ Replace the lid
Check the <b>lock of the pressure lid</b> for correct operation.	S	see separate check list FU2.4. Set the lock correctly. If faults are found ⇒ Dismantle the parts; clean, lubricate, reset or replace them. Write a report on the servicing of the pressure lid.
Check and test the <b>lid safety valve</b>	S	If faults are found or deviations from the normal function are identified ⇒ Replace individual parts or the whole insert.
Check the <b>rotation link</b> and <b>cold-water supply pipes</b> for leaks		If leaks are found ⇒ Replace worn parts or change seals.
Check the operation of the <b>cooling water valve</b> and check for leaks	S	If leaks are found or faulty operation is encountered ⇒ Replace the valve.
Are the <b>information</b> stickers still on the pressure lid?		If these are missing ⇒ Stick on new stickers.

S = Part is relevant for safety  
If, during servicing, an increased number of failures is noted for a part that is relevant for safety, a

written report must be sent to the «Aftersales» office responsible without delay.

## 2.5. ACCESS TO INSIDE

see § 1.5.



## 2.6. FUNCTIONAL COMPONENTS

### FU2.1. OPERATING FOIL

see § FU1.1.

### FU2.2. UNIVERSAL CONTROL

**Control switch (S), Safety thermostat (F1), Food sensor (B1), Bottom sensor (B2), Electric heating (EI, EA), End switch (ES), Terminals, Control fuse (P1), Contactors (K), Heating resistor (E11), Power isolator (H)**

see § FU1.2.

### PRESSURE SWITCH (B3)

The pressure switch (B3) is located in the right-hand console under the input terminals of the main power supply and is there to limit the pressure inside the pan. The switching points are: switch off at 0.35 bar, switch on at 0.29 bar. In the stationary operating area for pressure cooking, the pressure inside the pan varies between these two limits.

**Removal:** Dismantle the cover (A) as described in § 1.5. Disconnect the electrical leads from the switch. Unscrew the switch from the connecting lead.

**Installation:** Proceed as described under "Removal" but in the reverse order. Clean the thread with a wire brush and coat with Loctite 577 before screwing it back in.

### STEAM TEMPERATURE SENSOR (B4)

The food sensor (B4) is located on the front wall of the pan roughly in the middle. The active part of the sensor is pressed against the pan by a retaining clip.

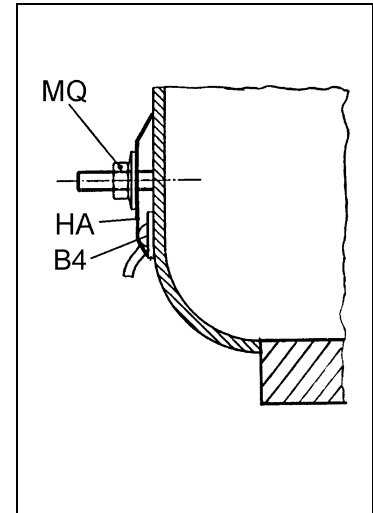
#### Test

Disconnect the sensor cable from the control print. Measure the resistance with an ohmmeter at the ends of the cables. They should show a resistance of  $1097\Omega$  at  $25^{\circ}\text{C}$ .

**Removal:** Remove the front wall of the pan cladding (see § 1.5). Release the nut (MQ) and withdraw the sensor (B1) from the retaining clip (HA). Dismantle the switch panel (F) on the right-hand console as described in § 1.5. Disconnect the sensor cable at the J18 push-on connections on the control print (SP). Attach a strong cord to the end of the cable. Pull the cable out of the appliance through the pan pivot. Take the cord off the cable and leave it in the appliance.

**Installation:** Attach the cord well to the end of the cable on the new sensor and pull the cable through the appliance again. Proceed as described under "Removal" but in the reverse order. Make sure that the flat side of the sensor is pressed well against the pan with heat conducting paste (Rüeger/Crissier RTP/II).

Following replacement, the sensor must be retrimmed as described under «Trimming».



### FU2.3. TILTING

see § FU1.3.

## FU2.4. PRESSURE LID (D)

### Maintenance check list

Check		Fault & Remedy
Does the <b>lid</b> lie flat? Is the gap between the lid and the lid flange equal on all sides (front and back, right and left)?	S	If the gap between the lid and the lid flange vary excessively ⇒ Set the lid.
Is the <b>lid</b> adequately and correctly balanced?	S	If falsely set ⇒ Readjust the lid springs.
Does the <b>lid seal</b> have any cracks or other damaged areas?	S	If the seal is damaged or leaks when in use ⇒ Replace the seal.
Are the <b>lid bearings</b> ok? Check the attachment- and locking screws for corrosion and tightness.	S	Replace the bearings if damaged. Tighten the screws.
Can the <b>locking mechanism</b> be operated normally and can the pressure warning device be operated correctly?	S	If an abnormal state is identified ⇒ Check all locking components, reset, possibly replace and secure all lock parts.
Does the <b>lock</b> operate asymmetrically (left- and right-hand catches engage differently)?	S	If an abnormal state is identified ⇒ Check all locking components, reset, possibly replace and secure all lock parts.
Do the <b>catches</b> engage correctly when the lid is closed? Is the specified amount of play present?	S	If an abnormal state is identified ⇒ Check all locking components, reset, possibly replace and secure all lock parts.
Check the <b>seal</b> for leaks between the right-hand bearing and the lid while in use.		If a leak is detected, dismantle the seal and replace any damaged parts.

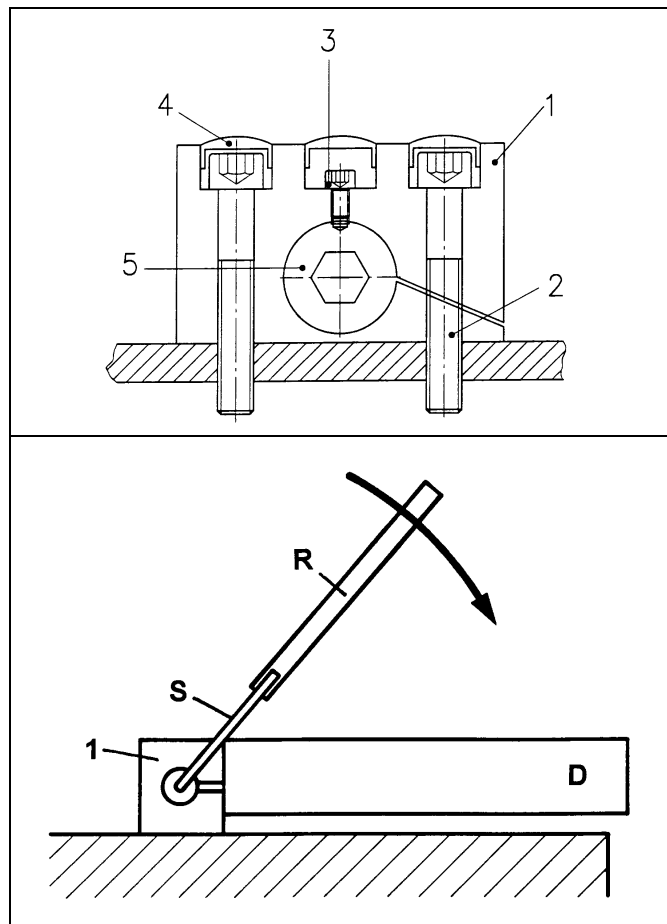
### A. REPLACING THE PRESSURE LID

#### Removing the lid

- Raise the lid (D) and remove the collector channel by releasing the two screws and withdrawing it from the clamps.
- Close the lid (D) but do not lock it.
- Remove all lock hoods (4) from the bearings (1).
- Withdraw the centre locking screw (3) Ø6 mm on both bearings.
- The lid (D) is pretensioned on both sides by a spring element.

**Warning:** The screws (2) must not be withdrawn unless the appropriate precautions have been taken! Proceed as follows to relieve spring pressure, remove the bearings and the spring elements:

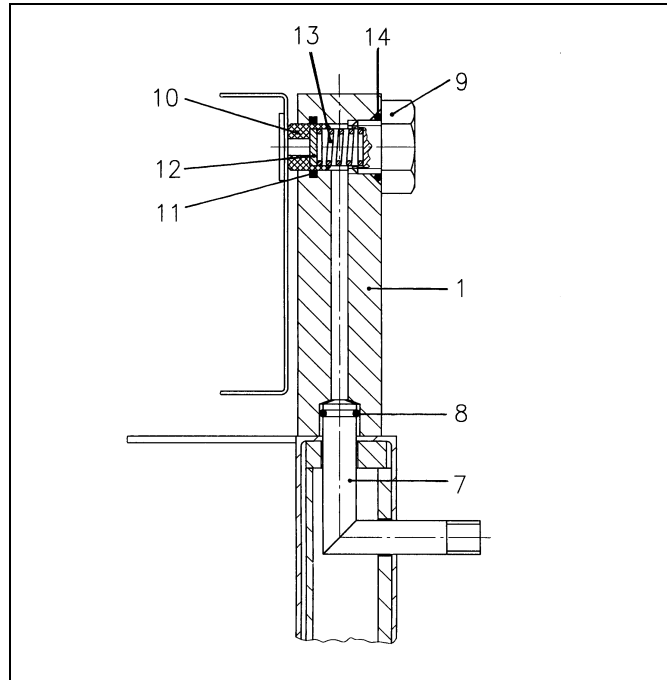
- Insert a wrench (S) (17 mm A/F) into the centre of the shaft (5), hold the wrench (S) in position with an extension tube (R) and gently release the rear screw (2) on the bearing (1) with a wrench (8 mm A/F). Release the spring tension by turning the wrench (S) to the front. If the spring tension is not fully released, tighten the screw (2) again, return the wrench, release the screw (2) again and repeat the procedure described above until the spring tension is fully released. Then untension the spring on the other side of the lid, if fitted, in the same way.



- Remove all 4 screws (2) completely.
- Raise the back of the lid with the bearings approximately 3 cm straight up and support from underneath. Ensure that the protruding tube (7) on the right-hand bearing is not damaged.
- Remove the bearings (1) and the spring elements (F) from the lid on both sides. The spring element is square in shape and is not fixed in the lid casing.
- Have the lid lifted off the appliance by two men and make sure that the lid seal is not damaged.

Appliance	Lid weight in kg
UET-060, 090	55
UET-100, 150	77

- Remove the screw (9) and all the parts: (10) sealing made of PTFE, (11) O-ring seal, (12) disk, (13) spring, (14) O-ring seal belonging to the seal from the right-hand bearing support.



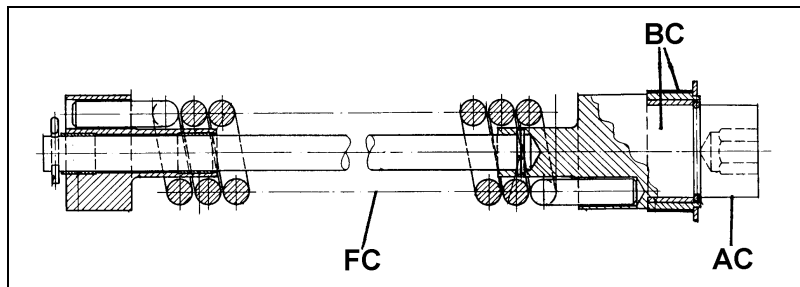
### Fitting the lid

- Check the O-ring seal (8) on the protruding tube (7) on the right-hand bearing; if this is damaged, replace it with a new one. Grease the O-ring (8). Check that the screw (9) and all the parts belonging to the seal (10) to (14) are free from wear and are still

serviceable (replace with new parts if necessary) and place them ready for refitting.

- Have two men replace the lid on the appliance and make sure that the lid seal is not damaged. Support the back of the lid from underneath roughly 3 cm above the appliance, so that it is not resting on it.

	Spring elements (FC) part no.:	
	left side	right side
UET 060, 090	70.0166	70.0164
UET 100, 150	70.0166	70.0165



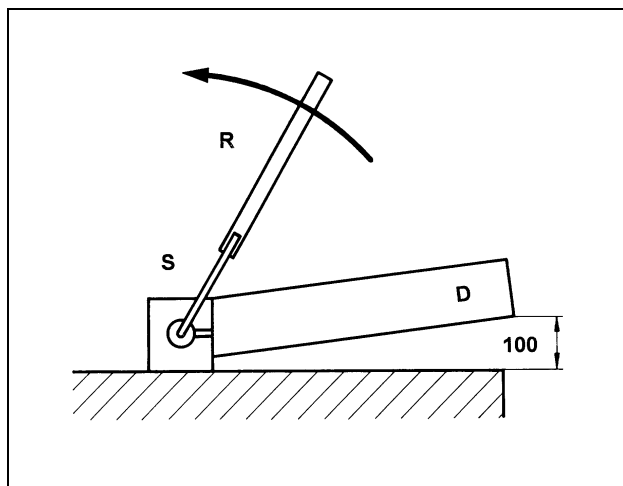
- Coat the spring elements heavily with Chesterton 725 anti-corrosion spray inside and outside. The shafts (A) of the spring elements and the bearing bushes must be clean, totally free of grease and dry.
- Insert the spring elements into the lid on both sides. If the square piece has too much play in the tube, insert strips (B) on different sides between the spring element and the tube (article no. 70.1545.XX).
- Fit the bearing (1) to the shafts (A).
- Lower the lid with the bearings onto the mounting surface and insert the protruding tube (7) carefully into the right-hand bearing without damaging the O-ring (8).
- Fasten the front screws (2) tightly. The rear ones should only be tightened up very gently with the wrench.

- Tension the spring using the wrench (S) and the extension tube (R) by turning the wrench towards the back and then tightening the rear screw (2). Both springs (if fitted) must be tensioned to roughly the same reaction force. Repeat the process if the pretensioning is too weak: reset the wrench (S), release the rear screw (2), turn the wrench to the back, tighten the rear screw (2). The lid is correctly tensioned when the lid comes to rest about 10 cm above the edge of the pan at the front.

Torque requirements in Nm:

	LH	RH
UET-060, 090	106	106
UET-100, 150	98	164

- Tighten all the screws (2). Apply the correct torque of 58 - 60 Nm with a special wrench.
- Spot-drill the two pivot pins (5) with a  $\varnothing$  10 mm drill to a depth of at least 6 mm through the holes in the bearing supports (1).
- Screw in the centre locking screws (3) on both bearing supports (1) so that the cylindrical part of the screw (3) enters the above-mentioned holes.
- Install the seal parts (10) to (14) into the right-hand bearing in sequence and tighten the screw (9) with the O-ring (14).



- Press in all lock hoods (4).
- Check that the reference plates 74.0467 and 71.3155 are fitted to the lid. They must be affixed if missing.

**When replacing an entire lid or the lock units, all the locking parts must be reset, secured and sealed as described in «Lid lock».**

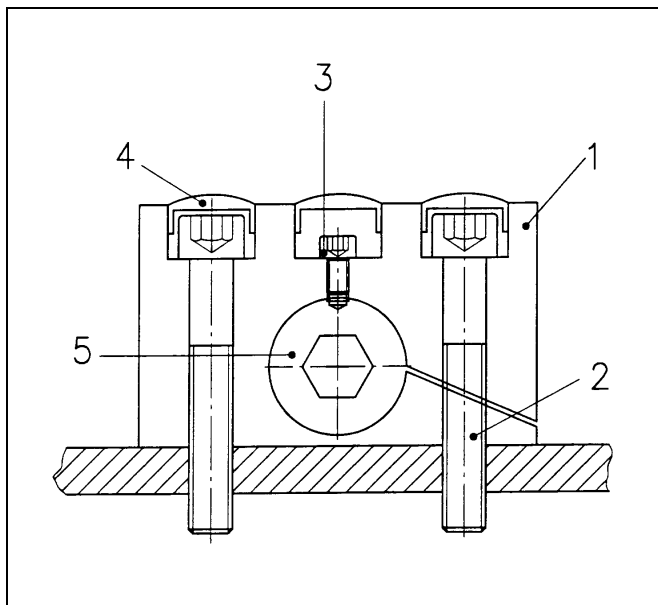
### CONVERTING THE LID BEARINGS TO STRONGER SCREWS (3)

In the original design, an M8 screw with a  $\varnothing$  6 mm cylindrical shank was used as the centre locking screw. For reasons of safety, it has been decided to replace this locking screw with an M 12 screw with a  $\varnothing$  9.5 mm cylindrical shank (part no. 71 3349).

#### Conversion procedure

Please refer to the section «Replacing the pressure lid».

- Remove the old locking screws (3).
- Drill out the existing M8 thread in the bearing supports (1) with a  $\varnothing$  10 mm drill and cut an M12 thread.
- Tension the lid springs correctly and tighten the screws (2).
- Drill out the two pivot holes (5) with a  $\varnothing$  10 mm drill to a depth of at least 6 mm through the holes in the bearing supports (1).
- Screw in the centre locking screws (3) on both bearing supports (1).



**B. LID LOCK**

The lid lock fitted to tilting pressure braising pans must be checked at least once a year and may only be serviced,

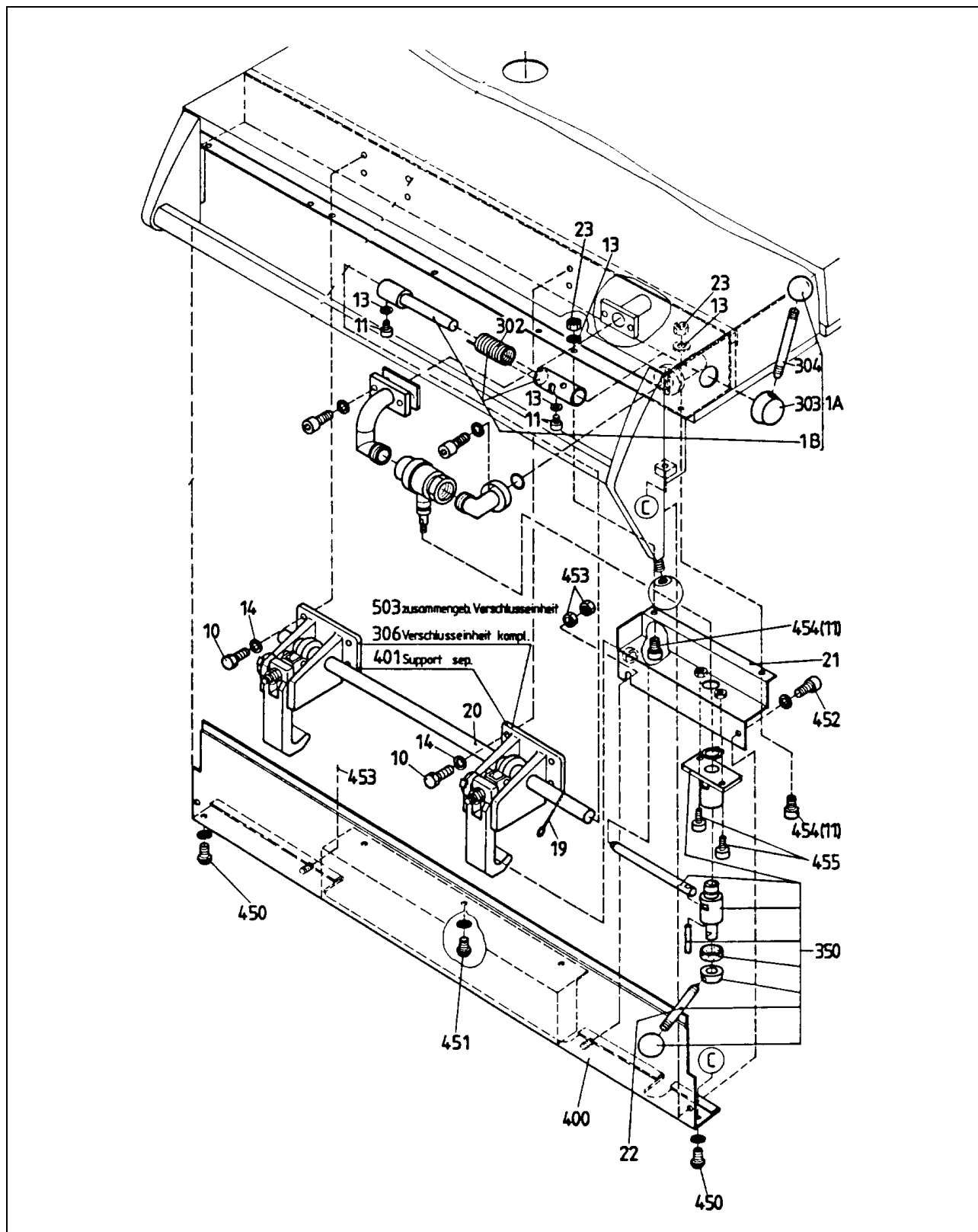
adjusted or repaired by service staff trained and authorized by the manufacturer.

**ACCESS TO THE LOCK**

Remove the panel (400) on the front of the lid.

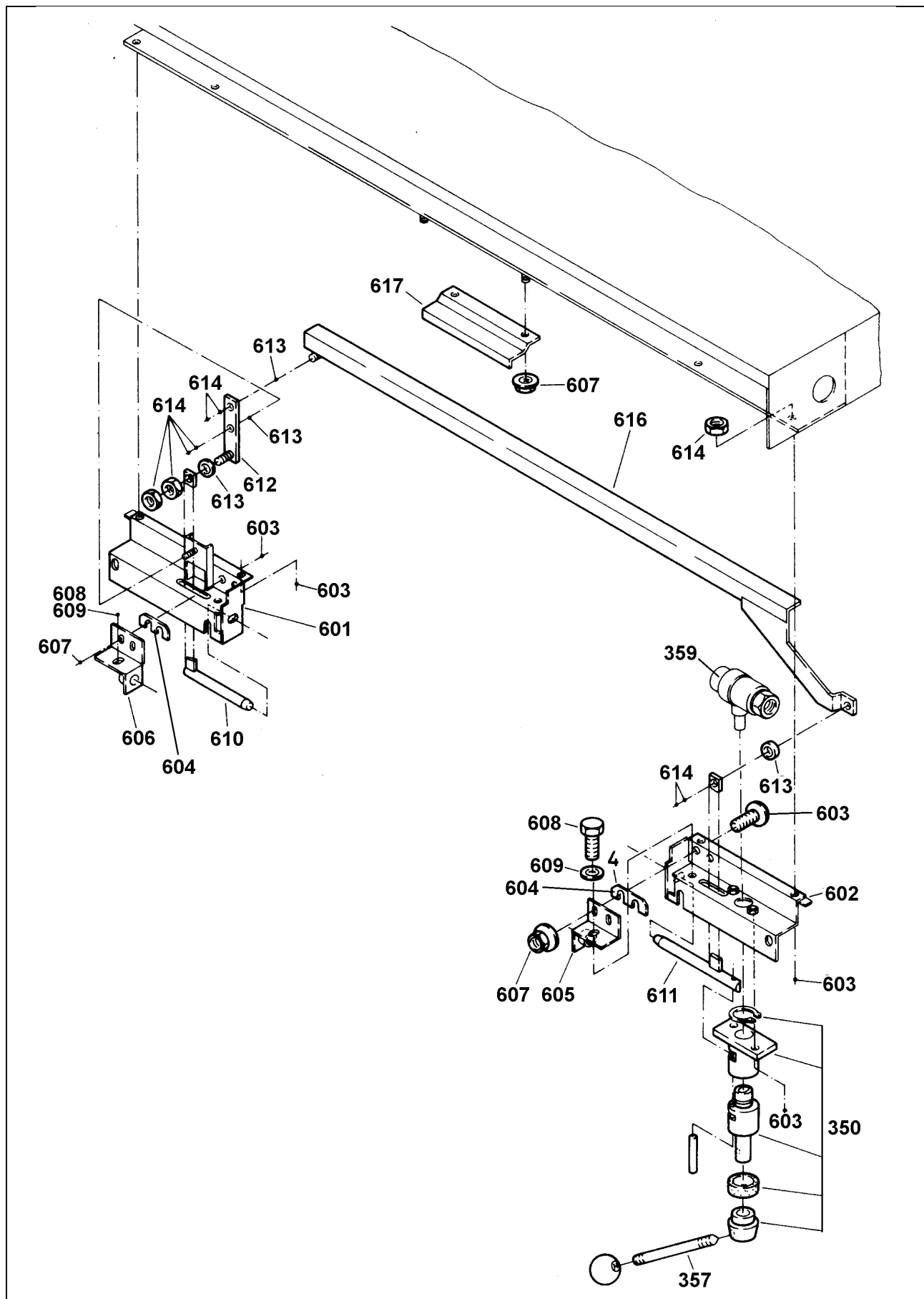
Proceed as follows: Remove the screws (450), (451) and (452), nut (453) and handle (22). Pull down the panel (400).

Refit the panel (400) in the reverse order to the removal procedure.



Securing the right-hand catch

Securing the two lock catches is a variation on the design in which the right-hand catch is secured. The parts shown below are not interchangeable with the original version.



Securing both catches

## LOCK ELEMENTS

The pans have two locking catches.

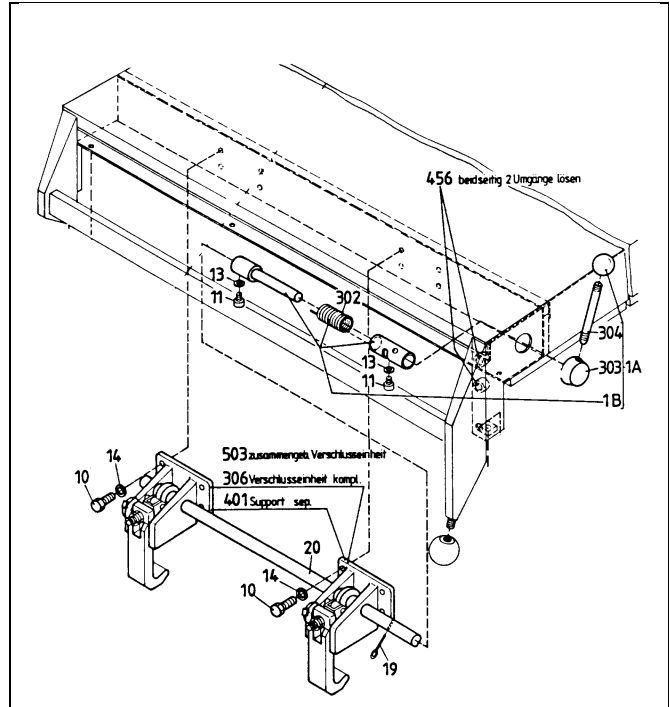
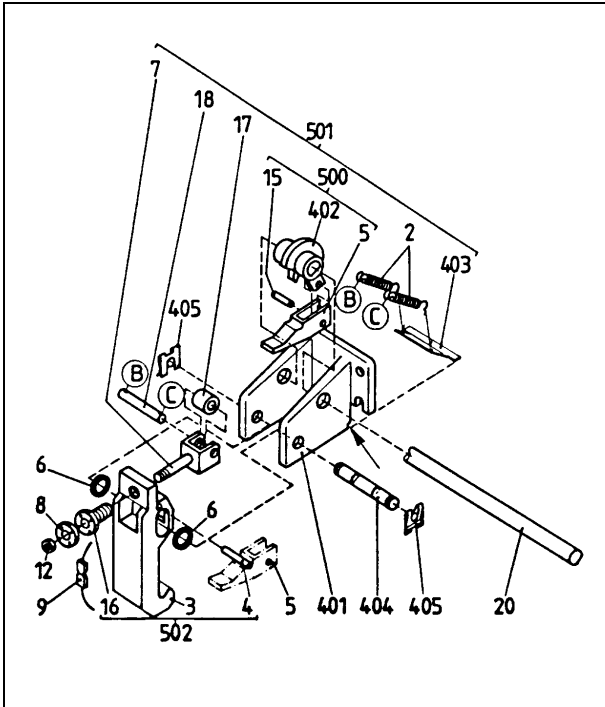
**Parts subject to wear:** Check the parts listed below for wear and tear, cracks, breakages, deformation and functional efficiency: spring (2), catch (3), pin (4), wedge (5), fork pin (7) and eccentric (402).

**Security elements** on the complete lock: Check the security elements listed below for their presence, wear and tear, strength, tightening torque and operating efficiency:

pivot pin clip, (405), special nut (8), lock nut (12), seal (9), screws (10) with shakeproof washers (14), screws (11) with washers (13) and split pin (19).

### Important:

- If the screw (11) has become loose on its own, it must be replaced together with its washer (13) irrespective of condition.
- The screws (11) must be tightened and secured with Loctite 243.



## Torsion spring (302)

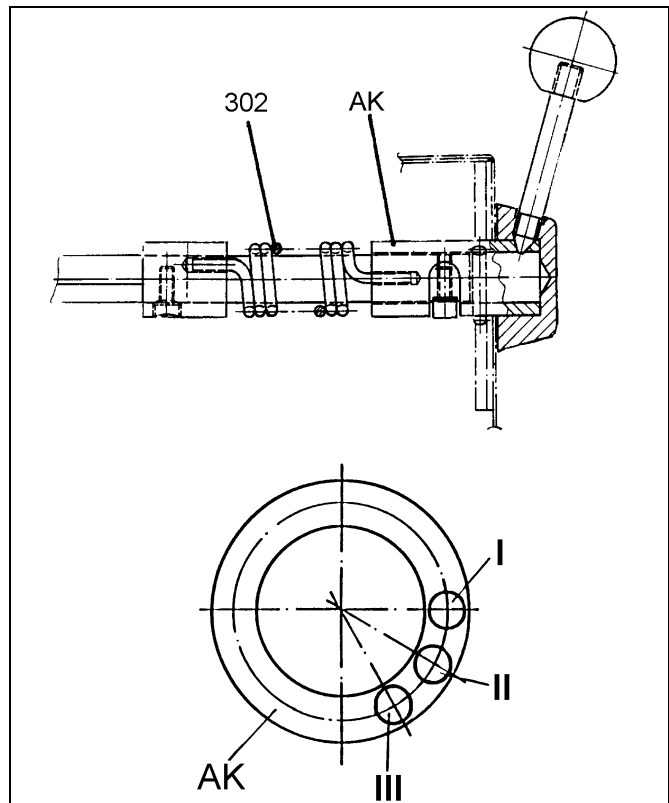
Check that the torsion spring (302) on the lock drive (1B) is installed correctly in accordance with the picture on the right.

Setting:

Unscrew the lever arm (304). Pull off the hub (303) to the right. Extract the split pin (19). Slide the lock shaft (20) with the lock drive (1B) approximately 50 mm to the left. Unscrew the right-hand screw (11) with the spring washer (13) and pull apart the lock drive (1B). Install the torsion spring (302) in the drive coupling (AK) adjusted to the correct tension in accordance with the type of appliance.

Installation position Appliance

I	-
II	UET 060, 090
III	UET 100, 150



The catches and safety locking pins are set on both sides (left and right) in the same way with the same dimensions.

### Locking catches (3)

**a. Adjusting the locking catches** in relation to the retaining wedges.

#### Important

When the lock is closed, the catches (3) must engage with the retaining wedges (24) by approx.  $8 \pm 0.5$  mm. The radius areas (RD) of the catches must not engage.

Adjusting a catch:

Open the lock. Unscrew the locknut (12), special nut (8) as well as the adjusting sleeve (16). Coat the thread of the adjusting sleeve (16) with Loctite 243 and screw the adjusting sleeve (16) back in again. The approx.  $8 \pm 0.5$  mm engagement of the catch (3) in the retaining wedge (24) can be set by turning the adjusting sleeve (16).

Turning counter clockwise  $\Rightarrow$  reduces engagement. Turning clockwise  $\Rightarrow$  increases engagement. Coat the thread of the fork pin (7) with Loctite 243, screw on the special nut (8) and tighten it on the adjusting sleeve (16) (hold the adjusting sleeve with tool 76.8100). Tighten the locknut (12) against the special nut (8). Fit the special nut (8), the adjusting sleeve (16) and the locking catch (3) with a lead seal (9) (the lead seal is not used to ensure strength).

The position of the roller (17) must not be on the dead-centre of the eccentric (402) when the lock is in the closed position.

Check that the springs (2) are in the correct position. They must not touch.

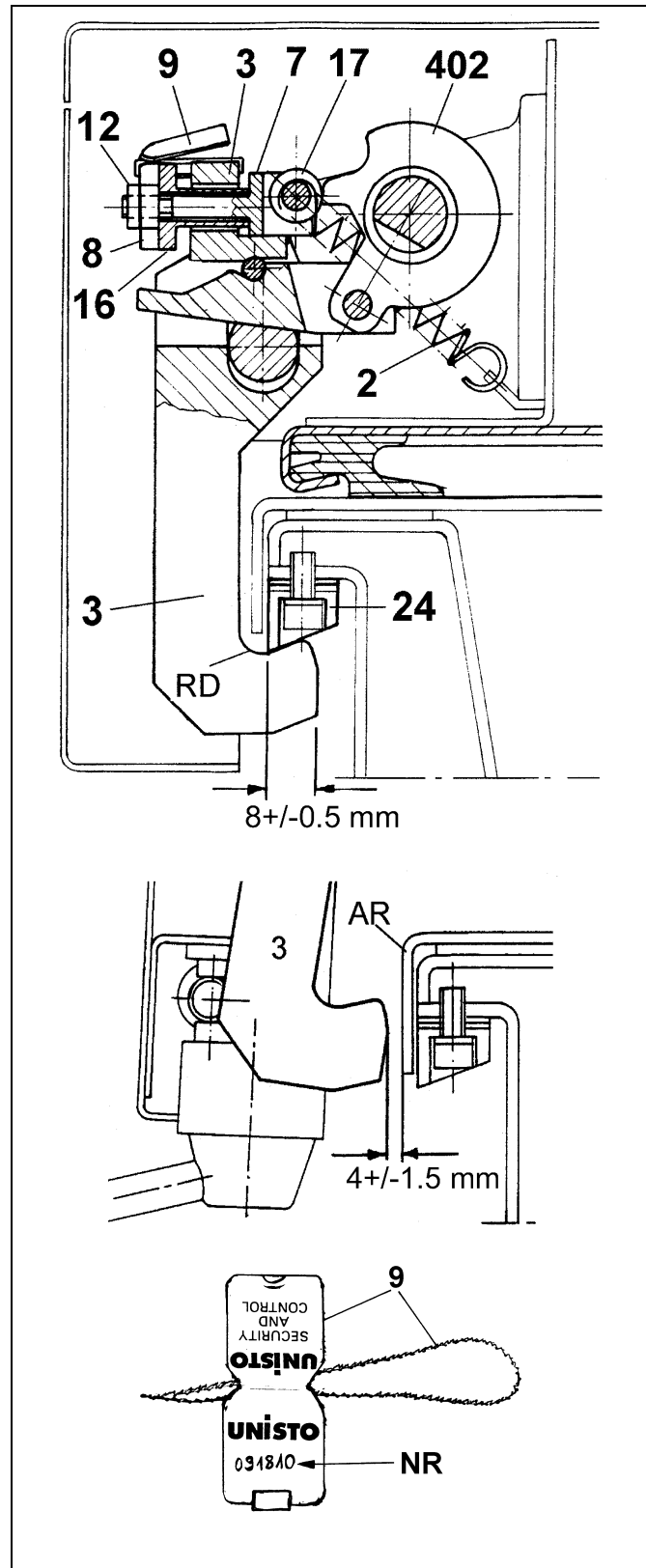
The gap between the catch (3) and the appliance cover (AR) must be  $4 \pm 1.5$  mm when the catch is in the open position (use gauge 76.8100 to check the gap).

#### Important

The numbers (NR) pressed into the lead seal (9) must be entered into the service report for the lock.

#### Test

Conclude by operating the lock several times and check the positions of the catches.



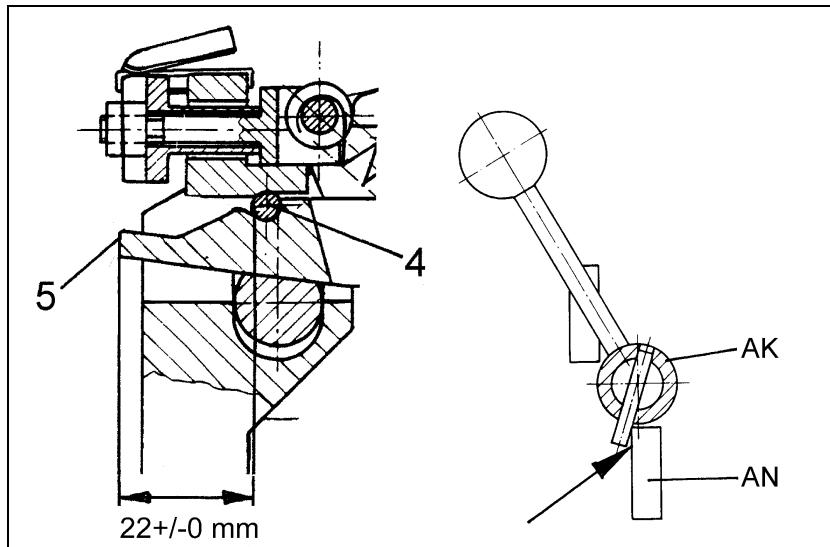


**b. Position of pin (4)****Important**

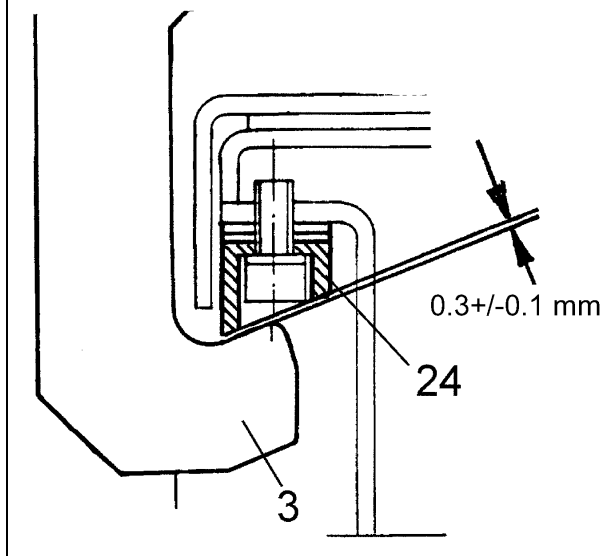
The gap between the pin (4) and the end of the wedge (5) must be 22 mm (measure with gauge 76.8100) when the lock is in the closed position.

**Adjusting the stop**

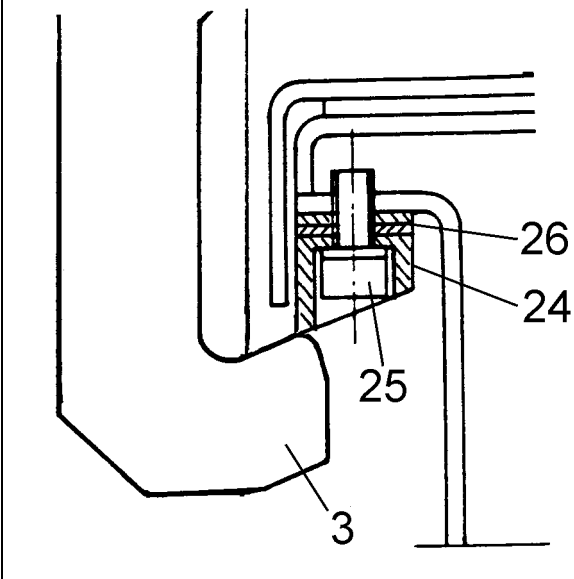
With the lid open, set the lock to the closed position. If the gap is less than 22 mm, the stop (AN) must be adjusted at the position indicated with an arrow, i.e. material must be filed away manually. File the stop until the pin engages with the 22 mm dimension. Operate the lock several times and check the position of the pin. No jerks or jamming must be encountered when the lock is operated.

**Adjusting the retaining wedge (24)****Check**

Press down the lid manually using the handle with average force. The gap between the catch (3) and the retaining wedge (24) must not exceed  $0.3 \pm 0.1$  mm (measure with feeler gauge). When manually opening and closing the lock by pressing the handle down gently, the catch (3) may touch the retaining wedge (24) slightly. Without downward manual pressure on the handle the lock must not open of its own accord.

**Adjusting the height of the retaining wedge**

Procedure: Unscrew both screws (25). Remove or add shims (26) under the retaining wedge. Tighten the retaining wedge (24) in place with the screws (25) and lock washers. Important: In borderline cases, it is better to insert a shim (26) too many rather than too few.



### Tap mechanism (350) with locking pin (355, 610, 611) (Pressure warning device)

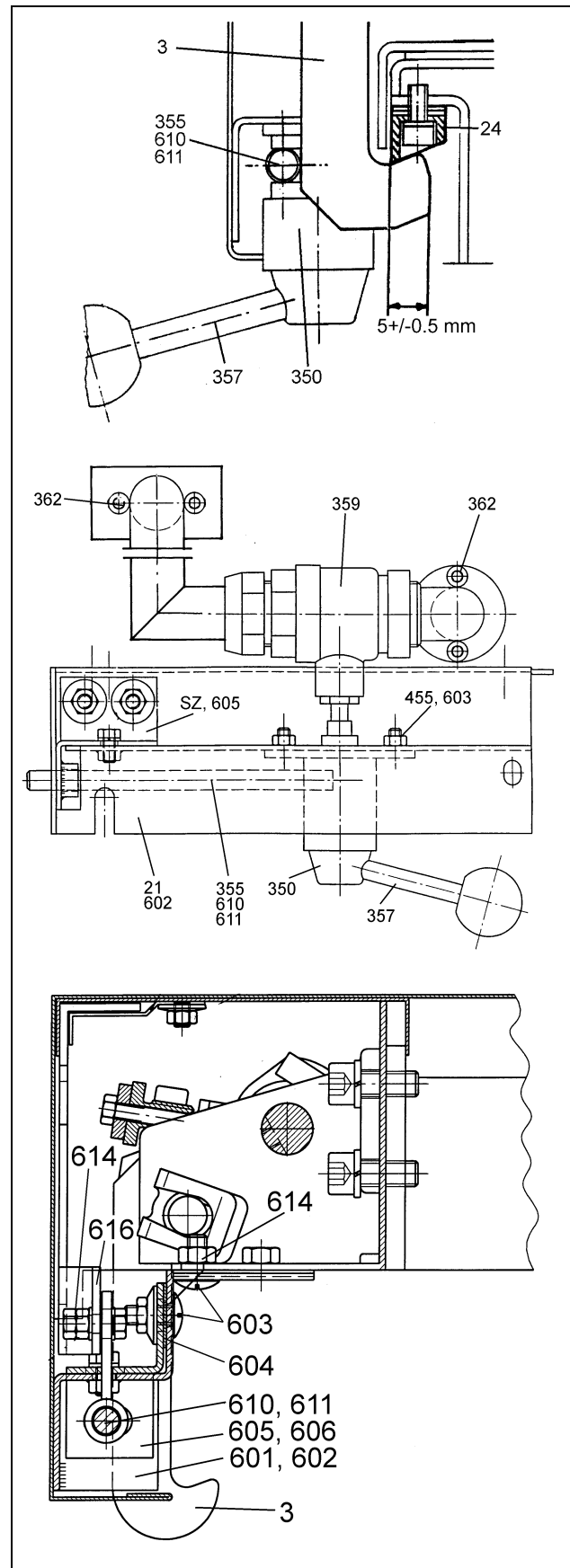
#### Check:

- Shut the lid and close the lock, operate the tap drive (350), i.e. turn the lever (357) to the left. The locking pins (355, 610, 611) now obstruct the catches (3).
- Release the lid lock with the lever (304).
- When this is done, the catch (3) must engage with the retaining wedge (24) by at least  $5 \pm 0.5$  mm.

#### Adjusting the locking pins (355, 610, 611):

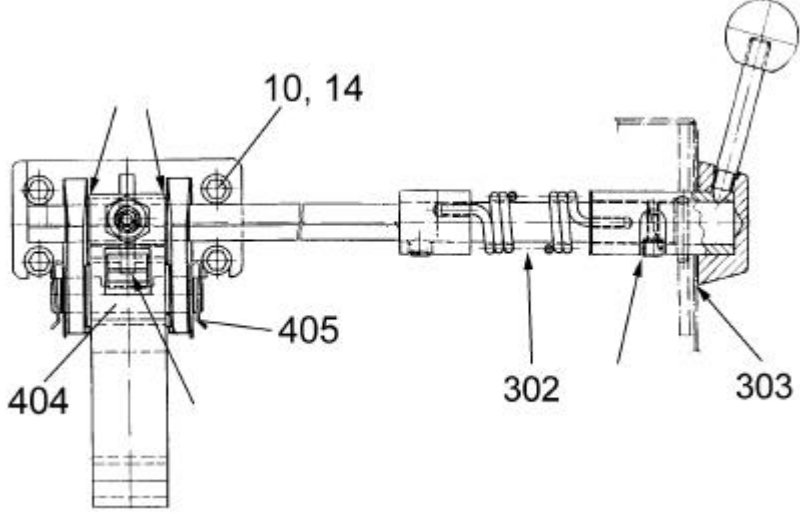
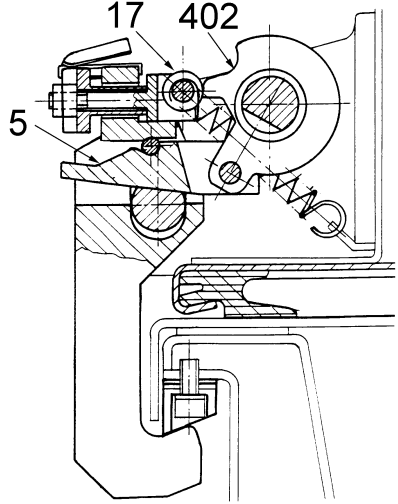
The position of the locking pins can be adjusted in relation to the gap from the catches (3) by inserting packing (604). More packing will move the locking pin away from the catch. The packing shims (604) are provided in thicknesses of 0.5 mm and 1 mm (Art. nos. 70.1514.01 and 02). The packing shims can be inserted or removed after slackening the screws (603). The locking pins are correctly adjusted when they run past without rubbing when the lock is closed (catch in position).

Check that all the fixing screws for the tap mechanism (455), support (SZ, 605, 606) and retaining panel (21, 601, 602) are really tight. If not, tighten them or replace the parts mentioned. The screwed (614) are secured by locknuts. If any screwed connection on the lock have to be released, they should be anointed with Loctite 243 prior to retightening.



**Lubrication**

Parts of the lock must be treated with the lubricants listed. The free operation (operate several times) and functioning of all moving parts must also be tested.

<p>Parts: Spring and shaft (302), under the hub (303),</p> <p>Spray: Chesterton anti-blocking agent no. 725 stock no. 712 044 488</p>	<p>Parts: Top of wedge (5), roller (17), eccentric (402), inner side of the spring (302)</p> <p>Lubricant:: Klüber paste UH 1 84-201 stock no. 1 101 8962</p>
	

**LOCK UNIT (306)**

If faults are discovered on the lock unit (306) or on the shaft (20), the entire set consisting of the complete lock units (306), the shaft (20) and the split pin (19) must always be replaced. No old or previously used parts should be reused.

**Removal**

Take the split pin (19) off the shaft (20). Release the left-hand screw (11) on the spring shaft and slide the shaft (20) to the left out of the spring shaft. Remove 4 screws (10) and the spring washers (14) from the lock units (306) and extract all the parts.

**Installation**

Proceed as described under "Removal" but in the reverse order. The screws (10) and the washers (14) must be torqued to 20 Nm. The screws (404) must be secured with the retainers (405).

**When replacing lock units, all lock parts must be readjusted, secured and sealed as described in the section «Lid lock».**

**HAND VALVE (359)****Removal**

Remove the two screws (455). Take out the tap drive (350) with the locking pin (355). Remove the 4 screws (361) on the flanges and take out the valve (359) with the pipes. Unscrew the two pipes.

**Installation**

Proceed as described under "Removal" but in the reverse order. Seal the threads between the valve and the pipes with Loctite 577. Ensure that the pipes are correctly located. Seal the flanges with silicone putty resistant to a temperature of 150°C.

**OPERATING CHECK**

At the end of servicing, all the lock functions must be thoroughly checked as described in operating instructions. The appropriate remedial measures should be taken if any irregularities or difficult operation are encountered.

## SERVICE AND MAINTENANCE REPORT FOR THE PRESSURE LOCK

All servicing must be carried out as described in the manufacturer's manual. At the end of servicing work on the lock system, the following report no. 71.3170

(sample) must be completed or updated by the service engineer for each appliance. The report must be kept in the central files of the service organisation.

Company		<b>MAINTENANCE SERVICE REPORT</b> for fast opening lock		Page
Name of object:				
Commission no.:				
Series no.:				
Location:				
Position no.:				
Date of initial operation:				
Observations:				
Registration no. of fast opening lock:		SVDB	9269004	
		TÜV	30.8.1994	
Tests as described in the Service Manual:				
Testing date	Testing results/Lead seal no.	Signature	Name of service engineer	Next testing date

### C. LID SEALING

Elastic seals for increased pressure and temperature loads as well as mechanical movements are subject to ageing in line with their frequency of use. The longevity and function of the seal is thus limited.

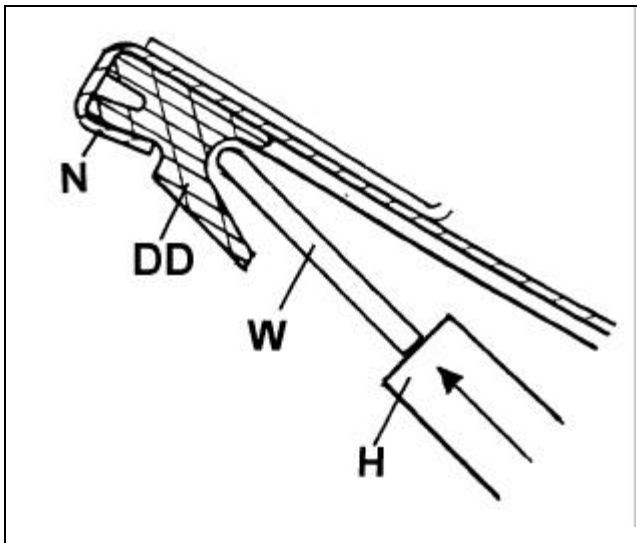
#### Servicing

Check the seal (DD) visually for cracks, brittle areas or other damage. Check the sealing properties of the seal in operation.

#### Replacement

Extract the old seal from its groove and dispose of it in line with ecological requirements. Clean the groove in the lid. Smear the groove (N) and the new seal (DD) with soapy water. Insert the seal into the groove with care to prevent any extension or compression. Press the seal well into the groove all round and tap it into place with a blunt tool (W) and a hammer (H).

The seal is effective owing to its geometrical form and requires no other attachment involving adhesives or silicone putty..



## D. LID SAFETY VALVE (DV)

The valve is intended for deaerating purposes, for manually reducing the pressure inside the pan and for limiting the steam pressure inside the pan as a safety valve. It begins to blow off at a pressure of  $0.42 \pm 0.01$

bar and is fully open at a pressure of 0.45 bar. A pressure indicator device is located on top of the valve and this shows the user before opening the lid whether the appliance is still under pressure.

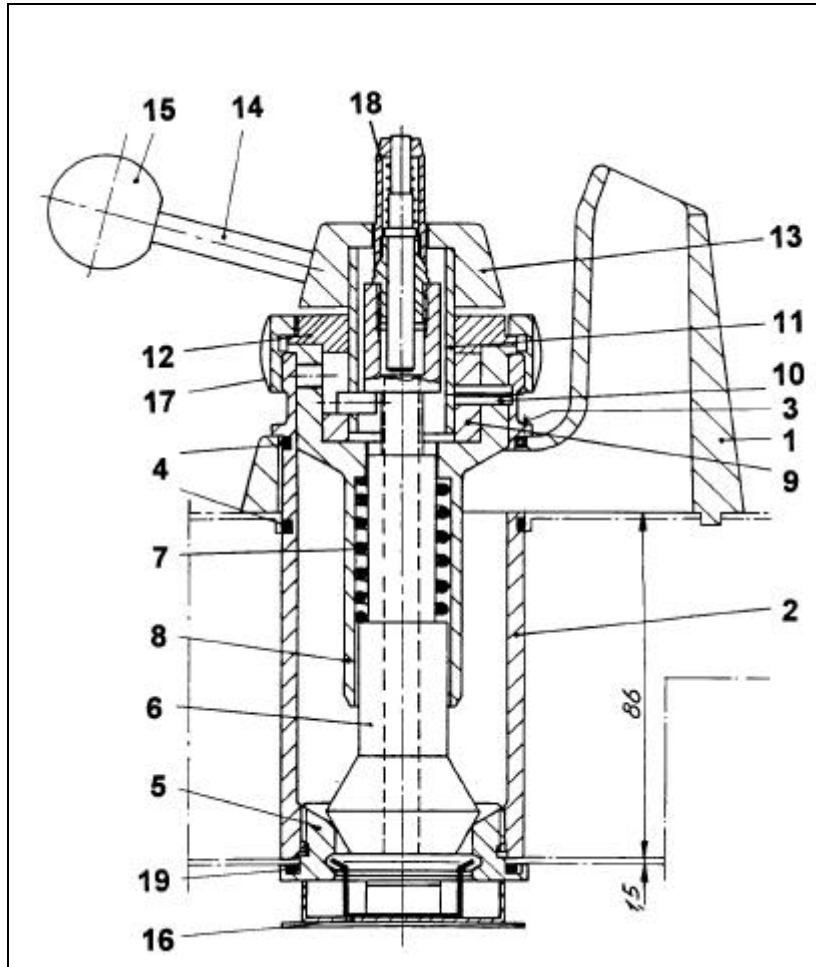
### Removal

Unscrew the nut (17) by hand or with a wrench (67 mm A/F). Lift off the entire valve insert. Extract the steam baffle (16) underneath the lid from its snap fitting. Unscrew the lever (14) with the knob (15) from its hub (13). The tip of the lever also locates the hub on the sleeve (11). Pull off the hub (13). Unscrew the pressure indicator (18). Lift off the disk (12). Axially compress the spring (7) and withdraw the sleeve (11) at an angle. The parts (8) and (9) are connected to one another with a pin and cannot be dismantled. Take the valve cone (6) and the spring (7) out of the insert (8).

If the valve is to be dismantled any further, proceed as follows: Unscrew the nut (5) together with the O-ring using a special tool or a flat steel bar 40 x 4 mm which has been ground to the correct size. Pull the tube (2) with the O-rings upwards out of the lid. Remove the steam vent (1).

### Installation

Proceed as described under "Removal" but in the reverse order. When assembling the steam vent (1) and the tube (2), ensure that they are correctly located as shown by the engagement of a pin (3). The O-rings must also be undamaged.



### Cleaning

Completely dismantle the valve insert (parts 6 to 15) and thoroughly clean all external and internal surfaces with a plastic brush and a degreasant cleaning agent. The pressure indicator consists of 4 parts. After unscrewing the cap, all the parts can be disassembled and cleaned.

### TESTS

#### Pressure indicator (18)

Check that the pressure indicator operates correctly in use.

Testing the assembled pressure indicator (on its own without the valve) using air. Connect a manually operated bellows pump with a pressure gauge and check valve by slipping an elastic hose onto the thread (outside diameter 12 mm). With the pressure indicator vertical, the red pin must be up to the first notch at a pressure of 50 mbar and be fully out at 100 mbar.

#### Lid valve

Check that

- all functions and positions of the operating lever can be set correctly when the appliance is both hot or cold,
- the valve opens fully and correctly in normal operation (pressure cooking with minimum water added and at full power),
- the valve closes correctly after pressure has been reduced and the appliance is being used again,
- the spring in the valve works. Place the fully assembled valve insert (parts 6 to 15) on some scales, press down on top of the hub (13) and read off the reading on the scales. On the first movement of the spring, the scales must indicate a reading of 3800 to 4000 grams, and just before the end of the stroke a reading of approx. 4800 grams.

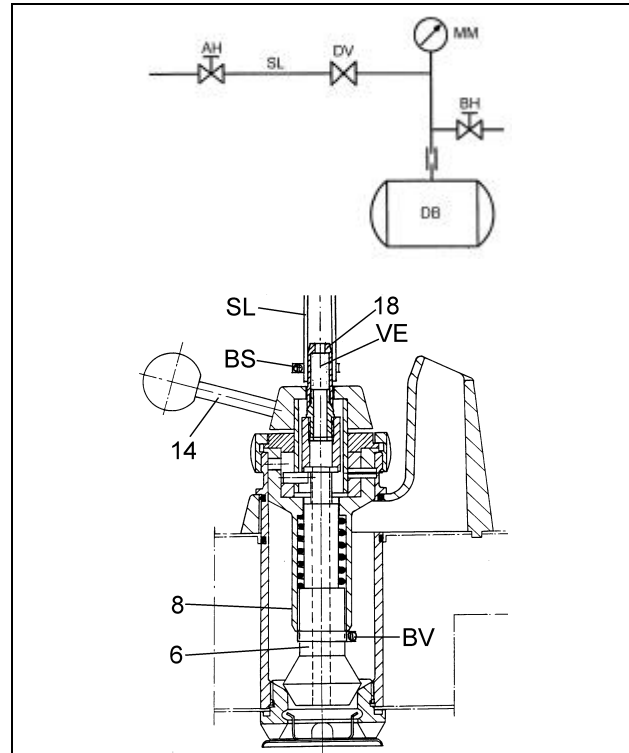
If the valve shows signs of any change in terms of function, wear and tear, pressure indication or spring pressure, it must be cleaned thoroughly. If faults are still apparent after this, the relevant parts must be replaced.

## FU2.5. COMPARTMENT PRESSURE TEST

Whilst a pressure test carried out at fixed intervals is not compulsory, the operator should have a pressure test carried out periodically in the interest of troublefree operation and safety. The pressure test is done with cold water taken from the water main. Ensure that the pressure chamber is filled completely (no air pockets).

### Connection

With the lid open, fill the interior of the pan from the mixing unit or with a hose to the top. Close the lid and lock it. Take out the lid valve core. Pour water in through the valve until it is completely full. Move the activating lever (14) of the valve core to the closed position (the valve cone (6) is farthest out of the guide (8)). Clamp the valve cone (6) with a clip (Ø = 22 mm) so that the cone (6) will not slide in the guide (8). Unscrew the upper part of the pressure indicator (18) from the valve core. Take off the red indicator pin (VE) and the spring of the pressure indicator and refit the upper part. Prepare a hose (SL) which is fitted with a fine stop valve (AH), a bypass valve (BH), a test pressure gauge (MM) and an external safety valve or pressure-reducing valve (DV) (limiting pressure 0.67 bar) and, at the end, is pushed onto the open pressure-indication pipe (18) and fixed in position with a clip (BS) (12 mm diameter pipe). Fit the valve core to the valve body. Connect the hose to the water mains.



### Test pressure gauge specification

Bourdon tube pressure gauge, range 0 - 2.5 bar overpressure, max. temperature 50°C, 100 mm diameter, to class 1 accuracy, radial connection, G1/4" thread with sealing washer, direct installation without a rim, measuring element made of copper alloy, steel casing.

### Important

Please note that the pressure in the vessel, which is completely full of water, can rise very quickly when more water is added at a higher pressure. The pressure rise must be done very slowly and carefully so as not to damage the vessel.

### Test

Build up pressure in the vessel by slowly opening the tap and then closing it again when the test pressure is reached. Test pressure = max. 0.65 bar (max. operating overpressure 0.50 bar). The test pressure must be maintained for 10 minutes. During this period, please note the following:

Can the pressure be maintained? Does it collapse? Is there a leak anywhere? Does the lid seal leak? Have any deformations appeared on the lid, lock or the interior? If a fault is found during the pressure test, it must be attended to and remedied immediately.

### Report

At the end of the pressure test, the service engineer must compile a report on the pressure vessel concerned with the following specific details:

PRESSURE TEST REPORT	
Designation/type:	Tilting pressure pan/ ....
Commission no.:	
Series no.:	
Year of construction:	
Location:	
Manufacturer:	
Supplier:	
Kind of pressure vessel:	Compartment, pressure lid
Date of last pressure test:	

Vessel volume dm <sup>3</sup> :	
Max. working overpressure bar:	0.50
Test overpressure bar:	0.65
Test temperature in °C:	
Test duration: min. 10 minutes	
Test result:	
Observations:	
Testing company:	
Tester's name:	
Date:	

Type	UET 060	UET 090	UET 100	UET 150
Vessel volume dm <sup>3</sup>	87	114	135	176

### After the test

Pressure in the container (DB) is relieved by opening the bypass valve (BH) and the hose (SL) with the pressure gauge (MM) and external safety valve or pressure reduction valve (DV) can be removed. After the pressure

test has been concluded, the lid valve must be returned to its original state and, in particular, the clamp must be removed from the valve plug, the water drained from the inside of the pan and the appliance returned to its operating state.

## FU2.6. MIXING UNIT see § FU1.5.

**FU2.7. COOLING WATER SYSTEM** (optional)

UET appliances are fitted with a cooling water jacket round the pan. The purpose of the cooling system is to condense the steam in the pan quickly when pressure cooking has been completed and to depressurize the appliance so that it can be opened immediately. Normal water from the mains supply is used as cooling water and

this is fed to the cooling jacket of the pan via a solenoid valve and rotation links.

The control system for the end of the cooling water supply is effected by means of a steam temperature sensor (B4) that is fitted to the outside of the pan (see FU2.2). The solenoid valve (KK) for the cooling water closes at a temperature of 102°C.

**A. PREVIOUS DESIGN**

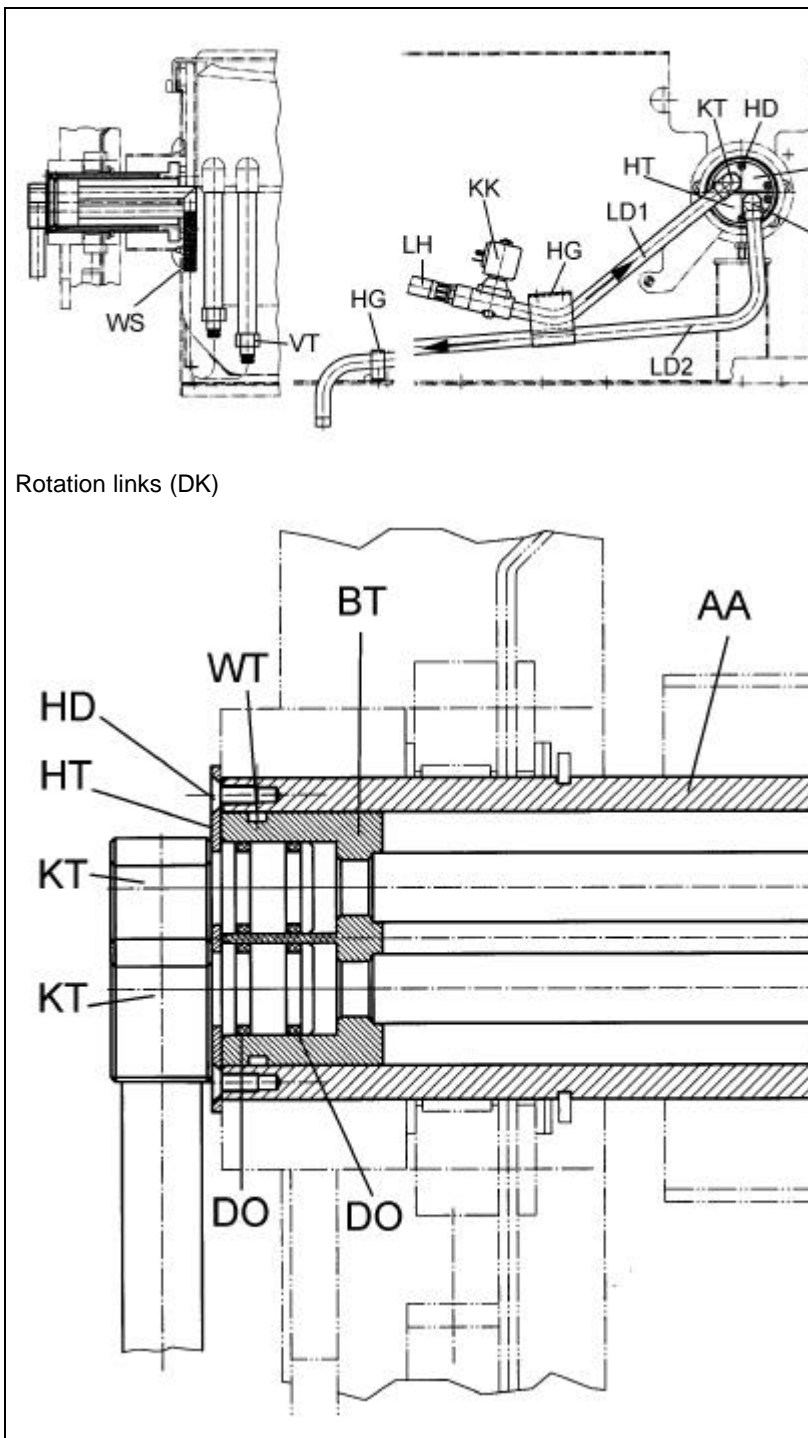
Cooling water enters and leaves via the left-hand bearing of the pan.

**ROTATION LINK (DK)**

In the case of appliances with steam condensation, cooling water is taken from the mains supply via a flexible line (LH), a solenoid valve (KK), a rigid line (LD1), the rotation link (DK) as well as an internal flexible line (WS) into the cooling jacket and, in a similar fashion, removed from the appliance again. The two rigid lines (LD1) and (LD2) in the console make movements during the tilting phase. The fixings (HG) permit these movements. The rotation links (DK) are subject to wear and must be inspected periodically, i.e. annually or serviced.

**Removal:** Remove the cover (A) of the console as described in § 1.5. Release the clips (HG). Take off the two retaining disks (HT) by removing the 6 screws (HD). Pull out the head (KT) from the bush (BT). The seals (DO) can be taken off the head.

The corrugated hose (WS) leads to the pan's cooling ducts. To remove this hose, the threaded joints (VT) on the pan must be undone and the hoses pulled out of the pivot (AA). This can be done when the pan bottom and the pan insulation are removed (see § FU1.2. «Electric heating»).



Rotation links (DK)

**Installation:** Proceed as described under “Removal” but in the reverse order. The seals in the rotation link must be liberally coated with Unisilikon L250L. The screws (HD) must be secured with Loctite 270 and tightened up.

**COOLING WATER VALVE (KK)**

See below.

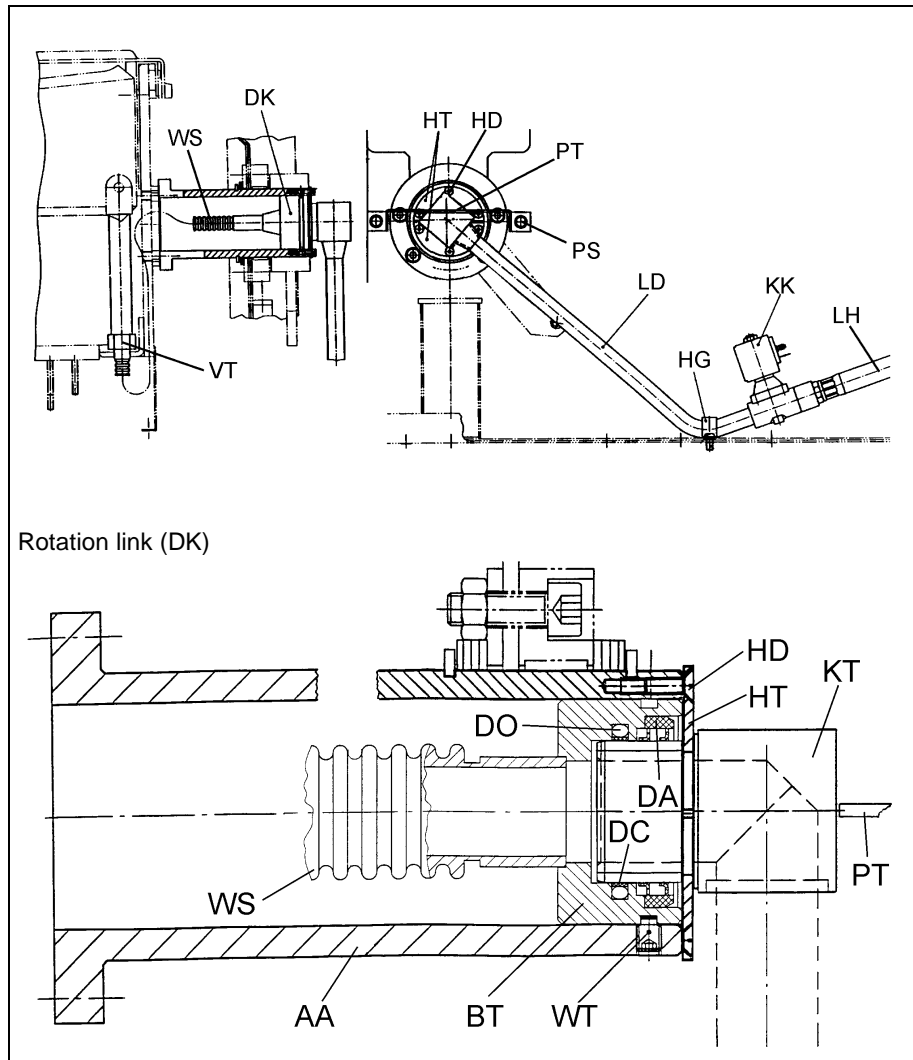
**B. NEW DESIGN** (from 02/97)

Cooling water enters via a rotation link (DK) through the left-hand bearing of the pan while it exits the pan directly via a funnel in the left-hand base or on the floor.

**ROTATION LINK (DK)**

In the case of appliances with steam condensation, cooling water is taken from the mains supply via a flexible line (LH), a solenoid valve (KK), a rigid line (LD), the rotation link (DK) as well as an internal flexible line (WS) into the cooling jacket. The lines in the console are connected with normal screwed joints and seals. The rigid line (LD) must be securely fixed to the console by a clip (HG) to take the torsional force of the rotation link. The rotation link (DK) is subject to wear and must be inspected periodically, i.e. annually or serviced.

**Removal:** Remove the cover (A) of the console as described in § 1.5. Take off the retaining clip (PT) by removing the two screws (PS). Take off the two retaining disks (HT) by removing the 6 screws (HD). Pull out the head (KT) from the bush (BT).



The seal (DA), the ring (DC) and O-ring (DO) can be taken out of the bush (BT). The corrugated hose (WS) leads to the pan's cooling duct. To remove this hose, the threaded joint (VT) on the pan must be undone and the hose pulled out of the pivot (AA). This can be done when the pan bottom and the pan insulation are removed (see § FU1.2. «Electric heating»).

**Installation:** Proceed as described under "Removal" but in the reverse order. The seals in the rotation link must be liberally coated with Unisilikon L250L. The screws (HD) as well as (PS) must be secured with Loctite 270 and tightened up.

**COOLING WATER VALVE (KK)**

This solenoid valve (KK) is connected to the cold-water supply via the connection (LH).

**Servicing:** Check for operating efficiency and inspect all sealing points and joints for leaks.

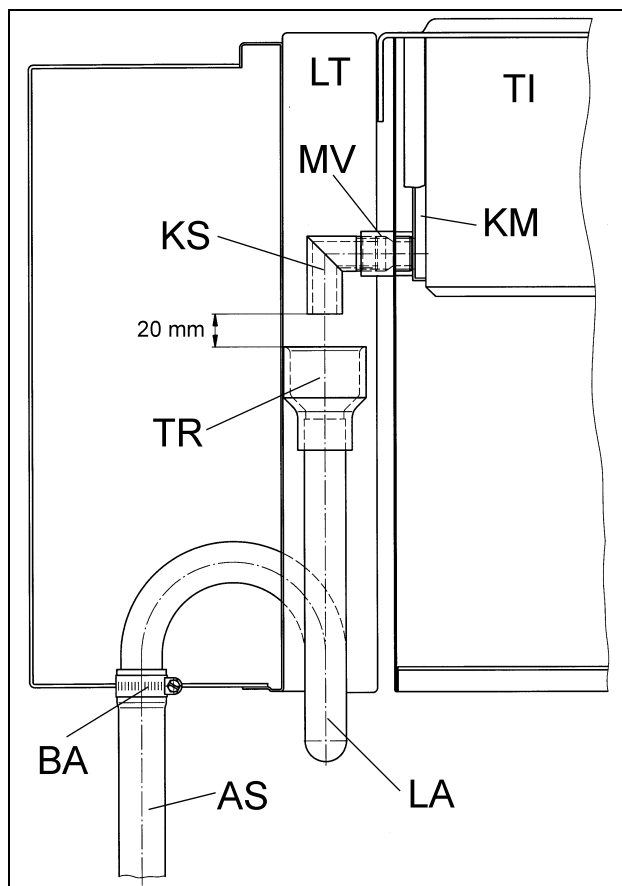
**Removal/Installation:** Disconnect the electrical leads. Disconnect all pipe joints which are sealed with flat gaskets or cutting rings. Installation is done in the reverse order.



The **drain** for the cooling water from the cooling duct (KM) of the pan (TI) is located on the left-hand side of the pan. Drainage takes place via the sleeve (MV) and the elbow (KS), into the funnel (TR) and through the pipe (LA) which is permanently connected to the bearing support (LT) of the lid, into a hose (AS) which discharges into a floor gully and is attached to the pipe (LA) with a hose clip (BA). In the case of wall-mounted appliances, the hose (AS) is connected within the cover panel (SA) (q.v. §1.5) to the on-site drain pipe protruding from the wall. In the case of floor-mounted appliances, the hose (AS) is connected within the stand or base to the drain pipe protruding from the floor. If parts of the pan drainage (MV), (KS), (TR) have to be replaced, they must be anointed with Loctite 577 before being reinstalled.

**Important**

In compliance with drinking water regulations, the gap between the lower edge of the elbow (KS) and the upper edge of the funnel (TR) must be 20 mm.



## FU2.8. PAN

### COMPARTMENT / BEARINGS / PIVOTS / CASING

see FU1.6.

## FU2.9. APPENDIX

### UNIVERSAL CONTROL DESCRIPTION OF PARAMETERS

see FU1.7.